Xu, Ying (2026) *When accountability breaks down: socio-material assemblages in COVID-19 governance*. PhD thesis.

https://theses.gla.ac.uk/85829/

Copyright and moral rights for this work are retained by the author

A copy can be downloaded for personal non-commercial research or study, without prior permission or charge

This work cannot be reproduced or quoted extensively from without first obtaining permission from the author

The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the author

When referring to this work, full bibliographic details including the author, title, awarding institution and date of the thesis must be given

Enlighten: Theses
https://theses.gla.ac.uk/
research-enlighten@glasgow.ac.uk

# When Accountability Breaks Down: Socio-Material Assemblages in COVID-19 Governance

By Ying Xu, BA, MAcc

Submitted in fulfilment of the requirements of the

Degree of Doctor of Philosophy

Adam Smith Business School

College of Social Sciences

University of Glasgow

September, 2025

# Abstract

This study investigates the enactment and reconfiguration of accountability in the context of everyday community governance during the COVID-19 pandemic in an urban Chinese community. Much of the existing literature conceptualises accountability in hierarchical, institutional, and human-centred terms, treating it as either a mechanism of control by the state or a compliance response by citizens. A critical engagement with these literatures reveals a gap: the complex ways in which accountability is dynamically produced through the entanglement of human and non-human actors, technologies, and affective forces are underexplored. To address this, the central research question guiding this study is: ***How is accountability enacted, distributed, and reassembled through socio-material networks during a public health emergency?*** Subsidiary questions further explore how technologies, legal devices, and community practices contribute to the formation and destabilisation of accountability relations, and what these processes reveal about the nature of governance under crisis conditions.

Actor–Network Theory (ANT) was adopted both as a theoretical lens and as a methodological strategy. ANT's utility lies in its insistence that no single actor—whether state, law, technology, or community—possesses pre-given explanatory power. Instead, agency and accountability emerge from the associations between heterogeneous elements. This theoretical move is particularly productive for a pandemic context, where accountability was not simply a matter of state directives or citizen compliance, but of how mobile phone health codes, quarantine seals, WeChat groups, policy documents, community workers, and residents were assembled into shifting networks. By "following the actors," ANT makes it possible to capture accountability not as a stable institutional arrangement but as a fragile and contingent socio-material accomplishment. ANT also enables a rethinking of responsibility beyond normative categories of duty or liability, showing how accountability is enacted performatively, through translations, negotiations, and displacements among diverse actors.

Methodologically, the study employs a qualitative case study design. Data were generated over the course of the pandemic through ethnographic observation, semi-structured interviews, digital ethnography, and inscription analysis. This multi-method approach was

chosen to capture the temporal unfolding of accountability relations and the multiplicity of sites—physical and digital—where they were negotiated. Ethnographic observations traced the rhythms of community life and the mundane practices of surveillance, compliance, and care. Interviews with residents and community workers surfaced perceptions of fairness, responsibility, and trust. Digital ethnography followed the circulation of accountability discourses in WeChat groups and online forums, while inscription analysis mapped how policy documents, notices, and seals codified responsibilities. Together, these methods operationalised ANT's methodological imperative to track associations and translations across time and space, producing a richly textured account of pandemic governance.

The findings show that accountability was not a fixed attribute of institutions or individuals but an emergent, performative achievement. Non-human actors—health codes, quarantine seals, and algorithmic rating systems—were not merely instruments but constitutive participants in accountability practices, shifting responsibility and visibility among different actors. Affective forces such as fear, fatigue, and care animated these networks, influencing their stability and transformations. For example, while fear initially reinforced compliance with surveillance technologies, over time care and solidarity among residents generated new grassroots practices of accountability that partially displaced formal structures. When official systems faltered, these localised practices—sharing food, mutual monitoring, and informal coordination—temporarily stabilised governance.

These findings directly address the research questions by demonstrating how accountability was enacted through socio-material networks rather than imposed from above. They highlight the relational and contingent character of accountability: it is made and remade through negotiations between technological artefacts, legal discourses, human actors, and affective intensities. The study thus challenges the assumption that accountability can be reduced to hierarchical command or institutional design. Instead, it shows how accountability in crises is co-produced through fragile networks that are always at risk of breakdown.

The contribution of this research is threefold. First, it advances critical accounting scholarship by foregrounding the mundane, affective, and material dimensions of accountability, moving beyond static or instrumental accounts. Second, it extends public sector governance studies by demonstrating how accountability emerges not simply from

state–citizen binaries but from distributed networks that include digital infrastructures and non-human mediators. Third, it enriches ANT itself by illustrating its capacity to capture the temporal, affective, and socio-material processes of crisis governance, while also revealing its limitations in addressing normative concerns about justice and responsibility.

Ultimately, the study argues that effective accountability in crises does not depend on perfect systems of surveillance or formal legal controls, but on adaptive, caring, and materially attentive practices. This has implications for both theory and policy: theorists are urged to reconceptualise accountability as a socio-material performance rather than an institutional arrangement, while policymakers should recognise that resilient governance depends on supporting flexible, community-based forms of accountability rather than relying solely on top-down mechanisms.

# Table of Contents

Abstract ..... II
List of Tables ..... X
List of Figures ..... XI
Acknowledgement ..... XII
Authors declaration ..... XIII
Chapter 1: Introduction ..... 1
1.1 Context of the Study ..... 1
1.2 Research Aims and Questions ..... 6
1.3 Research Approach ..... 6
1.4 Research Contributions ..... 9
1.5 Stucture of the Thesis ..... 12
Chapter 2: Governance, Accountability, and Disaster Management ..... 15
2.1 Introduction ..... 15
2.2 On the notion of accountability ..... 16
2.3 Governance and Accountability ..... 24
2.4 Disaster Management: its implications for Governance and Accountability ..... 28
2.5 Studies on the recent pandemic ..... 34
2.6 Conclusion ..... 40
Chapter 3: Theoretical Framework – ANT and the Performativity of Accountability ..... 43
3.1 Introduction ..... 43
3.2 ANT – The Sociology of Translation ..... 45
3.2.1 Beyond Determinism: ANT's Relational-Materialist Intervention ..... 45
3.2.2 Conceptual Toolkit from ANT ..... 48
3.2.3 Callon's Four Moments of Translation as an Analytical Framework ..... 53
3.3 ANT in Accounting and Governance Research ..... 55
3.3.1 Accounting Inscriptions and Action at a Distance ..... 55
3.3.2 Accounting Innovations as Networks-in-the-making ..... 57
3.3.3 The Mediating Role of Accounting in Public Sector Governance ..... 58
3.3.4 Affect, Emotion, and the Agency of the Non-Human ..... 60
3.3.5 Summary ..... 61
3.4 Accountability as a Performative Effect of Socio-Material Translations ..... 62

3.4.1 Challenging Conventional Views: Beyond Structures and Linearity ..... 63
3.4 2 Positioning within Broader Performativity Debates ..... 64
3.4.3 Accountability as Actor-Network Effect: Performativity in Action ..... 66
3.4.4 The Engine of Performativity: Translation Processes Revisited ..... 68
3.5 Responsibility as Distributed, Contingent, and Relational ..... 70
3.5.1 Responsibility as Distributed: Dissolving the Human/Non-Human Divide ..... 70
3.5.2 Responsibility as Contingent: The Fragility of Network Effects ..... 72
3.5.3 Responsibility as Relational: Positionality within the Network ..... 73
3.6 ANT as the Research Approach ..... 75
3.6.1 Agnosticism: Suspending Judgement to Map Controversies ..... 75
3.6.2 Symmetry: Granting Agency to Humans and Non-Humans Alike ..... 76
3.6.3 Free Association: Following the Actors Without Predefined Boundaries ..... 77
3.6.4 Translation, OPPs, Inscriptions as Dynamic Trackers ..... 78
3.7 Conclusion ..... 80
Chapter 4: Methodology – Following the Actors ..... 82
4.1 Introduction ..... 82
4.2 Qualitative Case Study Design: Focusing on One Urban Chinese Community ..... 82
4.2.1 The Rationale for a Qualitative Approach ..... 83
4.2.2 Justification for a Case Study ..... 84
4.2.3 Site Selection: A Southern Chinese Community as a Telling Case ..... 85
4.2.4 Unit of Analysis: The Community as a Socio-Material Assemblage ..... 87
4.3 Data Collection ..... 89
4.3.1 Actor identification ..... 89
4.3.2 Research Methods ..... 96
4.3.3 Data Collection Periods Across Pandemic Phases ..... 103
4.4 Ethical Considerations ..... 108
4.4.1 Gaining Formal Ethical Approval ..... 109
4.4.2 Gaining Informed Consent ..... 109
4.4.3 Ensuring Anonymity and Confidentiality ..... 111
4.4.4 Minimising Harm ..... 111
4.4.5 Reflexivity ..... 112
4.5 ANT as a Research Strategy: Guiding Principles for Tracing Socio-Material Networks ..... 115
4.5.1 ANT as a Sensitising Framework ..... 116

4.5.2 Operationalising ANT's Core Principles ..... 116
4.5.3 ANT as a Guide to Data Analysis ..... 119
4.6 Conclusion ..... 125
Chapter 5: Constructing Control – The Early Assemblage of Pandemic Accountability .. 126
5.1 Introduction ..... 126
5.2 Emergence of actor-networks in response to the virus - Problematisation ..... 127
5.2.1 Pre-Crisis Fragmentation ..... 128
5.2.2 Problematisation: Chaos and Actors Redefinition ..... 129
5.2.3 Problematising the Obligatory Passage Point ..... 133
5.2.4 Toward a Provisional Problematisation ..... 135
5.3 Stabilising the Actor-Network: Interessment Mechanisms and Role Binding ..... 136
5.3.1 Material-Discursive Devices ..... 136
5.3.2 Reconfiguring Social Norms ..... 139
5.3.3 Negotiating Hybrid Agency ..... 142
5.4 Enrolling Actors: Coordinating and Formalising Roles ..... 146
5.4.1 Formalising Human Roles ..... 146
5.4.2 Embedding Non-Human Actants ..... 150
5.4.3 Enrollment as Translation ..... 152
5.5 Mobilising the Actor-Network: Stabilising Spokespersons and Contesting Representations 153
5.5.1 Establishing Legitimate Spokespersons ..... 153
5.5.2 Solidifying Boundaries and Authority ..... 157
5.5.3 Contestation and the Fragility of Mobilisation ..... 158
5.6 Conclusion ..... 160
Chapter 6: Disturbing the Actor-Network – Resistance, Withdrawal, and Reassembly .... 162
6.1 Introduction ..... 162
6.2 Policy Softening, Breakdown of Devices and Trust ..... 163
6.2.1 Policy Softening ..... 163
6.2.2 Actors Fatigue ..... 166
6.3 Emotional Burdens and Reflexive Ethics ..... 169
6.3.1 Moral Distress: The Crisis of Frontline Enforcement ..... 170
6.3.2 Residents Anxiety ..... 171
6.3.3 Reflexive Ethics: Accountability as Relational Reassembly ..... 173
6.4 Reassembling Accountability–Disobedience, Improvisation, and Grassroots

Reconfiguration ..... 176
6.4.1 Disobedience as Re-Translation: Contesting Algorithmic Authority ..... 177
6.4.2 Staff Improvisation: Rebuilding Actor-Network Through Pragmatism ..... 178
6.4.3 Informal Support Networks: The Solidarity Assemblage ..... 180
6.5 ANT Analysis: Controversy, Re-Translation, and Heterogeneous Reassembly in Actor-Network Transformation ..... 184
6.5.1 Controversy as Obligatory Passage Point ..... 184
6.5.2 Heterogeneous Engineering in Reassembly ..... 186
6.5.3 Re-Translation Cycles: From Disintegration to Reassembly ..... 188
6.6 Conclusion ..... 190
Chapter 7: Discussion – Accountability as Fluid Governance ..... 192
7.1 Introduction ..... 192
7.2 Accountability as a socio-material accomplishment—performed, not possessed ..... 193
7.2.1 From Static Attribute to Performative Effect ..... 193
7.2.2 The Constitutive Role of Non-Human Actors in Enacting Accountability ..... 195
7.2.3 Performativity in Practice: Rituals, Routines, and Resistances ..... 196
7.2.4 Summary: From Possession to Performance in Accountability Theory ..... 198
7.3 Displacement of Responsibility Across Time, Actors, and Affects ..... 200
7.3.1 Temporal Displacement ..... 200
7.3.2 Displacement Across Actors ..... 202
7.3.3 Affective Displacement ..... 204
7.4 ANT's Value in Revealing Mundane, Affective, and Material Dimensions ..... 207
7.4.1 Revealing the Mundane: Governance as Everyday Practice ..... 207
7.4.2 Affective Dimensions: Governance as Emotional Labour ..... 210
7.4.3 Materiality: Governance as Socio-Technical Assemblage ..... 212
7.5 Rethinking "State Control" and "Citizen Compliance" in This Study ..... 214
7.5.1. Beyond the State–Society Dichotomy ..... 215
7.5.2. Citizen Compliance as Negotiated Practice ..... 216
7.6 Implications for Critical Accounting and Public Sector Governance studies ..... 217
7.6.1 Implications for Critical Accounting Studies ..... 218
7.6.2 Implications for Public Sector Governance Studies ..... 220
7.6.3 Extending ANT into Crisis Governance and Accountability ..... 222
7.7 Conclusion ..... 224

Chapter 8: Conclusion ..... 226
8.1 Recap of Research Aims and Findings ..... 226
8.2 Research Contributions ..... 230
8.3 Limitations of the Study and Avenues for Future Research ..... 232
8.3.1 Limitations of the Study ..... 232
8.3.2 Avenues for Future Research ..... 234
8.4 Closing Remarks on Research Journey ..... 236
Appendix 1 ..... 238
Appendix 2 ..... 239
Appendix 3 ..... 240
Appendix 4 ..... 243
Appendix 5 ..... 244
Appendix 6 ..... 245
Reference ..... 246

# List of Tables

Table 4-1: Typology of Inscriptions Collected to Trace Non-Human Agency ..... 95

Table 4-2: Semi-structured Interview Guide .....98

Table 4-3: Key Sites for Ethnographic Observation ..... 99

Table 4-4: Categories of Documents Analysed .....101

Table 4-5: Phase-based Data Collection Strategy ..... 108

Table 4-6: Iterative Process of ANT-Informed Data Analysis ..... 123

Table 5-1: Institutionalisation Trajectory of Policy Documents ..... 151

Table 6-1 Evolution of Key Pandemic Control Policy Elements ..... 166

Table 6-2 Frontline Workers' Emotional Symptoms and Triggers .....171

Table 6-3: New Alliances and Semiotic Roles of Non-Human Actors ..... 187

Table 6-4: Translation Moments as Iterative Cycles in Actor-Network Reassembly . 189

# List of Figures

Figure 4-1: Snowball Sampling Process for Tracing Human Actor Associations ..... 92

Figure 5-1: The Materialisation of 'Essential Travel' ..... 152

Figure 6-1 : Reconfiguring Accountability Through Community-Based Verification 186

# Acknowledgement

I would like to express my sincere gratitude to all those who have supported me over the past four years, making it possible for me to write this acknowledgement here.

First and foremost, I would like to offer my special thanks to my parents. Without their unwavering support and love, I could not have completed not only these four years but also the many years of study that came before. They have always selflessly dedicated themselves to supporting my decisions in every possible way.

I extend my deepest appreciation to my supervisors, Professor Danture Wickramasinghe and Dr. Sisi Zou. Professor Danture Wickramasinghe has provided me with dedicated guidance throughout these four years, consistently steering me forward with his profound expertise. Meanwhile, Dr. Sisi Zou has offered continuous encouragement and support beyond academic guidance, accompanying me throughout my entire journey. Their extensive knowledge, coupled with immense patience and understanding, has been the cornerstone of my growth during these four years of study—even amid various challenges brought by the pandemic and my personal health issues.

My sincere thanks also go to my dear friends. They have always been there to encourage and console me in their own unique ways whenever I needed it.

Lastly, I wish to thank all the participants involved in this research. They generously offered their trust and time, without which this study would not have been possible.

# Authors declaration

I declare that, except where explicit reference is made to the contribution of others, that this dissertation is the result of my own work and has not been submitted for any other degree at the University of Glasgow or any other institution.

Printed Name: _____Ying Xu_____

Signature: _____ _____

# Chapter 1: Introduction

## 1.1 Context of the Study

The COVID-19 pandemic, first identified in Wuhan, China in late 2019, rapidly evolved into the most significant global health emergency of the 21st century (The Lancet, 2020). By July 2023, the World Health Organisation (WHO) had documented over 768 million confirmed cases and approximately 6.95 million deaths worldwide (WHO, 2023). Yet these staggering figures capture only a fraction of the pandemic's true impact. Beyond the immediate health crisis, COVID-19 triggered unprecedented disruptions across economic systems, social structures, and governance frameworks globally (Brammer et al., 2020; Leoni et al., 2021).

The scale and complexity of the pandemic necessitated governmental interventions on a global scale. Nations implemented diverse combinations of containment strategies, including lockdown measures, social distancing protocols, testing regimes, contact tracing systems, and vaccination campaigns (Hale et al., 2021). This global response created what amounted to a massive natural experiment in public governance, testing the capacities of different political systems under extreme conditions (Greer et al., 2020).

Notably, the governance challenges presented by COVID-19 were particularly complex due to several factors that distinguished it from previous public health emergencies. First, the coronavirus demanded rapid policy responses in the face of significant scientific uncertainty about transmission mechanisms, severity metrics, and appropriate countermeasures (Petersen et al., 2020). Second, the highly globalised nature of modern societies meant that national responses were inevitably interconnected, requiring international coordination even as many countries turned inward with border closures and travel restrictions (Shaw et al., 2020). Third, the prolonged duration of the crisis tested the sustainability of emergency measures and required constant adaptation of governance approaches, moving from acute crisis management to long-term strategic adjustment (Ansell et al., 2020).

Within this global crisis, China's pandemic response represents a significant case study. The Chinese government implemented "Dynamic Zero-COVID" strategy, characterized by stringent lockdowns, digital surveillance systems, centralised quarantine policies, and community mobilisation (State Council Information Office, 2020). This approach reflected China's particular governance model, combining authoritarian state capacity with technological innovation and grassroots social organisation in ways that offer important insights for understanding modern crisis governance.

Specifically, the Chinese response operated through a multi-tiered governance architecture, from central policy-making to provincial implementation to street-level bureaucracy (He et al., 2020). This hierarchical yet decentralised implementation structure allowed for both policy consistency and local adaptation, though it also created significant tensions and implementation challenges (Chen, 2024). At the community level, Residents Committees[1] (居委会)—officially grassroots mass organisations—became the frontline implementers of pandemic controls, responsible for enforcing complex and evolving regulations with limited resources and often ambiguous authority (Tomba, 2014; Chen, 2024). These committees evolved into crucial intermediaries between state policies and community realities, translating broad directives into local practices.

Digital technologies played prominent role in China's pandemic governance approach. The health code system—a colour-coded digital pass indicating infection risk based on travel history, contact tracing, and health reporting—became ubiquitous across Chinese cities, integrated with payment systems, public transportation, and building access (Chen, 2024; Liu, 2025). By early 2021, over 900 million people were using health code applications across China, representing one of the most extensive digital governance implementations in history (Liu, 2025).

The temporal evolution of China's response further illustrates the complexities of pandemic governance. The initial emergency measures (Dynamic Zero-COVID) gradually evolved into more sophisticated approaches described as "精确防控" (precision prevention),

[1] Although legally defined as a "mass organization of self-governance" rather than a formal government agency, the Residents Committee (RC) functions practically as the operational arm of the state at the neighbourhood level. Often described as the state's "legs and feet" (Read, 2000), RCs are staffed by community members but directed by street-level bureaucracy to perform administrative tasks—ranging from dispute resolution to population surveillance—thereby acting as the crucial gatekeepers of residential compounds (Tomba, 2014).

aiming to minimize social and economic disruption while maintaining infection control (National Health Commission, 2022). This transition required constant recalibration of governance mechanisms, as policies shifted from blanket restrictions to more targeted interventions (Zhai, 2023).

It is worth noting that the pandemic brought issues of accountability into sharp relief across all governance contexts, though with distinctive manifestations in different political systems. Accountability—understood as the requirement for actors to explain and take responsibility for their actions (Bovens, 2007)—became complex during the extended health emergency. Governments faced multiple, often competing accountability demands: to citizens for protecting public health while minimizing social disruption, to healthcare workers for providing adequate resources and protection, to businesses for economic support measures, and to international bodies for coordinating cross-border responses (Gostin and Wiley, 2020).

The technological dimension of pandemic response added further layers of complexity to accountability relationships. Digital surveillance systems, while potentially enhancing public health protection, introduced challenges around privacy protection, algorithmic transparency, and digital inclusion that existing accountability frameworks were poorly equipped to address (Gstrein et al., 2021; Ahn and Wickramasinghe, 2021). The rapid implementation of these technologies often outpaced the development of appropriate governance frameworks, creating accountability gaps and ethical dilemmas.

In the Chinese context, these challenges manifested in distinctive ways. The extensive use of digital surveillance raised questions about the balance between public health protection and privacy rights (Liu, 2025). The mobilisation of community organisations like Residents Committees created complex accountability relationships between state and society, as these grassroots organisations exercised significant authority while operating in ambiguous legal territory (Tomba, 2014). The constant adaptation of policies in response to changing conditions tested the consistency and transparency of governance processes, creating challenges for both upward accountability to superiors and downward accountability to citizens (Yu, 2021).

The COVID-19 pandemic thus represents a critical case for examining broader questions about accountability. It highlights the limitations of conventional models based on hierarchical control, clear jurisdictional boundaries, and stable institutional arrangements (Ahrens and Ferry, 2021). Instead, the pandemic response involved distributed networks of actors—government agencies, healthcare providers, community organisations, technology companies, and citizens themselves—operating in dynamic and often improvised configurations that traditional accountability frameworks struggled to encompass (Yu, 2021).

Conventional frameworks often treat accountability as a attribute—something that institutions have and can discharge through formal mechanisms such as reports, audits, or public statements (Mulgan, 2000; Bovens, 2007). This perspective is deeply embedded in principal–agent models, where accountability is conceived as a linear relationship: an agent (e.g., a government body) is held to account by a principal (e.g., the public) through predefined channels and standards (Sinclair, 1995; Romzek and Dubnick, 1987). Such models assume that accountability can be designed, implemented, and evaluated based on clear rules and hierarchical structures. During the pandemic, this manifested in an emphasis on calculative accountability (Baker, 2014; McKernan and McPhail, 2012): governments' use of quantitative data (infection rates, death tolls, vaccination numbers) to demonstrate competence and justify actions (Ahrens and Ferry, 2021; Ahmad et al., 2021).

However, this reductive focus on numerical accountability fails to capture the complex, lived reality of pandemic response, especially within communities where policies were ultimately implemented, resisted, and reinterpreted. As Yu (2021) critically observes, an over-reliance on calculative forms of accountability can "devour and dilute people's grief and suffering," rendering the social and psychological costs of the crisis invisible. In the Chinese context, where the state's "Dynamic Zero-COVID" policy was rigorously enforced through digital surveillance (e.g., health codes), centralised quarantine, and community mobilisation (State Council Information Office, 2020), the limitations of top-down accountability models become particularly evident. National-level analyses, often reliant on policy documents and official reports, tend to depict a monolithic state exerting control over passive citizens (Ahn and Wickramasinghe, 2021; Chen, 2024). Such accounts overlook the intricate socio-material practices through which accountability was enacted, contested, and reassembled at the grassroots level.

The problem, therefore, is twofold. First, there is a theoretical inadequacy: dominant accountability frameworks are ill-equipped to conceptualise accountability as anything other than a stable, often bureaucratic, output. They neglect the role of non-human actors (e.g., technologies, artefacts, bodies), affective dimensions (e.g., fear, care, distrust), and the mundane rituals through which accountability is performed in everyday life (Law, 2009; Latour, 2005). Second, there is an empirical gap: despite the rich literature on pandemic governance, few studies have closely examined how accountability is constructed and negotiated within local communities, especially in non-Western contexts like China—where state policies encounter situated realities, moral dilemmas, and material constraints.

This study therefore identifies a critical need to reconceptualise accountability in a way that captures its emergent, distributed, and socio-material character. This requires moving beyond what Roberts (1991) calls the "formal hierarchical" model of accountability and embracing a perspective that is attentive to the ways in which accountability is performed through dynamic networks of human and non-human actors. Actor-Network Theory (ANT) provides a theoretical lens for this endeavour. ANT refuses to pre-define what counts as an "actor" or where agency resides. Instead, it traces how agency emerges through associations between heterogeneous entities—people, technologies, documents, affects, and artefacts (Latour, 2005; Law, 2009). From an ANT perspective, accountability is not a fixed attribute but an accomplishment, a continuous process of negotiation, translation, and performance within actor-networks (Justesen and Mouritsen, 2011).

The research aim of this thesis—to conceptualise and trace accountability as an emergent, socio-material practice using ANT—directly addresses this theoretical and empirical problem. By asking how accountability is performed and distributed through actor-networks in everyday community practices and how human and non-human actors assemble and negotiate responsibilities, this study seeks to illuminate the often-invisible work that sustains accountability in crisis contexts. It challenges the reductive binaries of "state control" versus "citizen compliance" and reveals how governance is enacted through mundane rituals, affective engagements, and material arrangements.

In summary, the problem statement of this research is rooted in the recognition that existing accountability frameworks are inadequate for understanding the complex, dynamic, and often contested nature of pandemic response at the community level. By adopting an ANT-informed approach, this study aims to develop a more practice-based conception of accountability, one that is capable of capturing the realities of governance in times of crisis.

## 1.2 Research Aims and Questions

This research aims to explore how accountability is dynamically enacted, distributed, and reassembled within the socio-material networks of everyday community governance during the COVID-19. Moving beyond static and institutionally-bound conceptions, the study seeks to illuminate the fluid and emergent nature of accountability as it is performed through the interactions of human actors, affective forces, and technological artefacts. With this aim in mind, the study is guided by the following central research question:

- How is accountability enacted, distributed, and reassembled through socio-material networks during a public health emergency?

To address this overarching question, two subsidiary research questions are proposed:

- How do technologies (e.g., health codes, quarantine seals, digital platforms), legal devices, and community practices contribute to the formation and destabilisation of accountability relations?
- What do these processes reveal about the nature of governance and responsibility under conditions of crisis and uncertainty?

## 1.3 Research Approach

The choice of a qualitative methodology for this study is aligned with the research questions, which ask ‘how’ accountability is performed and distributed through actor-networks (Yin, 2018). A quantitative approach, seeking correlation or generalisable

patterns, would fail to capture the micro-processes of translation—problematisation, interessement, enrolment, and mobilisation—through which actor-networks form and hold together (Callon, 1986). This study is not concerned with measuring accountability as a variable but with tracing its emergence as a socio-material 'effect' (Law, 2004). Qualitative methods, with their emphasis on depth, context, and processuality, are therefore essential for providing a "thick description" (Geertz, 1973) of the practices that constitute accountability.

ANT is not merely a theoretical lens but also a methodological stance that shapes how research is conducted (Latour, 2005). It demands a radical empirical commitment to three core principles: agnosticism, symmetry, and free association.

Agnosticism required the suspension of all a priori assumptions about which actors were important, whether the state, the community, or specific technologies (Latour, 2005). This study entered the field not to test hypotheses but to discover the actors through the controversies they provoked and the associations they formed (Venturini, 2010). Also, generalised symmetry mandated that the analysis explain outcomes using the same conceptual framework for both human and non-human actors (Callon, 1986). This principle prevents the researcher from falling into the traps of social constructivism (where only humans matter) or technological determinism (where technology acts alone) (Callon, 1986; Latour, 1993). For instance, the health code was not analysed as a neutral tool but as an active mediator that shaped behaviours, triggered emotions, and delegated moral responsibility (Latour, 1999). Free association dictated that the researcher must follow the actors wherever they lead, without imposing predefined boundaries on the network (Latour, 2005). Therefore, the network's scope was not limited by administrative borders (the community compound) or sectoral domains (only the health sector). If a controversy led from a community gate to a municipal policy document, to a relative abroad influencing a resident's perception, the research followed these connections. This principle was operationalised through adaptive and emergent data collection strategies.

Guided by these principles, the study was conducted as a qualitative case study of an urban residential community in Southern China, given the pseudonym "the site" or "the community" to protect anonymity. A case study design is particularly suited to research

that investigates a phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident (Yin, 2018). This aligns with ANT's flat ontology, which rejects the micro-macro dichotomy and instead sees the 'local' as a network connected to other networks operating at different scales (Latour, 2005).

Data collection was conducted over 18 months, spanning four key phases of the pandemic (Initial Response, Provisional Stabilisation, Policy Softening, and Re-translation) to capture the dynamic evolution of the accountability network. A multi-method approach was employed to trace the heterogeneous associations that constituted this network.

Beginning with key informants (e.g., RC directors, volunteers), snowball sampling was used not merely for recruitment but as a method to trace the associations that constituted the network itself (Noy, 2008). Semi-structured interviews with residents, RC staff, volunteers, and business owners focused on narratives of action, negotiation, and controversy, using open-ended questions designed to explore how accountability was performed in practice. Moreover, observations were conducted at key sites where accountability was performed: community gates (temperature checks, code scanning), the RC office (policy interpretation, dispute mediation), and domestic settings (home quarantine). This method was vital for capturing the embodied and material dimensions of accountability that interviews alone could not reveal, such as the affective labour of enforcers or the material resistance of a broken scanner (Shove et al., 2012).

In line with ANT, 'following inscriptions' was a primary method for tracing non-human agency (Latour, 1990). A wide range of textual and digital artefacts were collected and analysed, including: policy documents, screenshots of health code interfaces and WeChat group debates, photographs of quarantine seals and data dashboards, and material objects like handwritten health logs. These inscriptions were treated not as passive records but as active 'immutable mobiles' that enabled action at a distance and stabilised reality (Robson, 1992). Also, the study participated in and observed 12 community WeChat groups over the research period. This platform was a crucial non-human actor—a 'hybrid forum' (Callon, 2009)—where accountability was publicly debated, contested, and reassembled in real-time. Digital ethnography allowed for the tracing of how affective intensities (fear, solidarity, distrust) circulated and shaped network dynamics (Boedker and Chua, 2013).

Data analysis was an iterative process of moving between empirical data and ANT's theoretical concepts. The cyclical moments of translation (Callon, 1986) provided an analytical framework for structuring the narrative of how the network formed, stabilised, and fragmented. Thematic analysis (Braun and Clarke, 2006) was used to identify patterns, while a symmetrical analysis was applied to ensure the agency of both humans and non-humans was accounted for in the construction of these themes.

Notably, the selection of the field site was also a theoretical choice. The community was chosen not for its statistical representativeness but because it operates as a "telling case" (Mitchell, 1984), one where the processes of theoretical interest are visible to permit detailed analysis.

The selected community characterised by a stable, long-term population and a well-defined governance structure centred on a Residents Committee (RC)—a standard feature of urban China's grassroots governance (Tomba, 2014). This community experienced the full trajectory of China's pandemic response, from strict lockdowns to the transition to "precision prevention" and eventual reopening, all while avoiding a catastrophic outbreak. This 'managed crisis' context is a significant advantage for analysis. It means that the socio-material transformations and ethical contestations of accountability documented emerged not from systemic collapse but from the ordinary processes of governing. This allows for a clearer analysis of the governance mechanisms themselves. The unit of analysis was the socio-material assemblage that emerged around pandemic governance within this setting (Mol, 2002). This assemblage included humans (RC staff, residents, volunteers), non-humans (health codes, seals, WeChat), policies, and affects, and the processes through which they were associated.

## 1.4 Research Contributions

This study makes contributions to the fields of critical accounting, public sector governance, and ANT itself by reconceptualising accountability through a performative, socio-material lens. Drawing on the empirical journey, it challenges static, top-down

models and demonstrates how accountability is continuously accomplished through the dynamic associations of human and non-human actors within fluid networks. The contribution of this research is threefold.

Fisrt, this research challenges predominant accountability frameworks within critical accounting that often treat accountability as a commodity to be discharged through formal reports and calculative data (Sinclair, 1995; Bovens, 2007; Mulgan, 2000). The study demonstrates that accountability is not a pre-existing resource but an emergent effect of networked relations, performed through everyday rituals, routines, and resistances (Law, 2009). This aligns with but extends the work of scholars like Robson (1992) and Quattrone and Hopper (2005) by foregrounding the role of non-human actors and affective dimensions in accounting practices. To be more specific, a key contribution is the detailed tracing of how non-human actors—health codes, quarantine seals, data dashboards, WeChat groups, and even paper logs—are not passive tools but active mediators (Latour, 2005) that co-constitute accountability. This analysis addresses a gap in accountability literature, which, even when discussing technology, often retains an anthropocentric focus, treating it as an instrument rather than an agent (e.g., Ahn and Wickramasinghe, 2021; Landi et al., 2022). Moreover, while numerical data from dashboards and reports were important, they were often supplemented by narrative and relational forms of accountability (Everett and Friesen, 2010), enacted through practices of care and solidarity. The creation of handwritten health logs, neighbour-verified stickers, and mutual-aid groups reperformed accountability on a more local, trust-based register, shifting from algorithmic surveillance to communal witnessing.

Second, the study challenges reductive binaries of ‘state control’ and ‘citizen compliance’ that dominate public sector governance literature (Foucault, 1991; Scott, 1998). Through an ANT lens, it reveals that both are not pre-defined conditions, but emergent effects of dynamic, socio-material networks. The empirical evidence shows that what is often labelled as ‘state control’ is in fact a distributed achievement, orchestrated through a network of policies, technologies, street-level bureaucrats, community volunteers, digital platforms, and affective relations. For example, the municipal health code’s authority was not inherent but performed through its integration into daily practices. Its power depended on the successful enrolment and alignment of diverse actors, and it faltered when misalignments occurred due to policy shifts or technological failures. This distributed view

challenges state-centric theories and resonates with notions of the ‘diffused state’ or the ‘state as network’ (Moran, 2002; Rhodes, 2007), and also complementing this part of work by incorporating non-human actors into the analysis.

Similarly, ‘citizen compliance’ is recast as a negotiated practice, deeply embedded within socio-material networks. Residents did not simply obey but engaged with health directives, developing workarounds and manual overrides when systems failed or were perceived as unfair. Compliance was a relational achievement, mediated by trust, reciprocity, and moral reasoning, thus challenging simplistic narratives of authoritarian compliance, highlighting the agency of citizens as active participants in the co-production of order (Osborne and Strokosch, 2013). The findings also speak to the evolution from New Public Management (NPM) to New Public Governance (NPG) (Osborne, 2010; Sørensen and Torfing, 2007). The study suggests that socio-material networks are the fundamental units of governance in crises, where improvisation and adaptation are key. The community’s response emerged not from a single entity but from the interactions of RC staff, residents, technologies, and policies, highlighting governance as the orchestration of human and non-human actors into functional assemblages.

Third, this study extends ANT into a new and critical domain: accountability under crisis conditions, characterized by radical uncertainty, affective intensity, and temporal dislocation. While ANT has been applied in accounting and organisational studies, it has largely focused on contexts of relative stability and slow institutionalisation (e.g., Briers and Chua, 2001; Quattrone and Hopper, 2005). This research captures accountability as a real-time achievement of repair and adaptation, where networks form, fail, and reassemble in rapid, often improvised ways. Also, affects like fear, care, exhaustion, and solidarity were active forces that shaped network configurations, displacing and reassembling responsibility. This enriches ANT’s traditional focus on interests and alliances (Boedker and Chua, 2013).

In summary, this study contributes to critical accounting by advancing a performative, socio-material understanding of accountability that incorporates non-human agency and affect; to public governance studies by revealing the networked and negotiated nature of control and compliance, challenging top-down models; and to ANT by extending its application into volatile crisis contexts and highlighting the crucial roles of affect and

temporality in network dynamics. These contributions are grounded in the empirical realities of pandemic governance in a Chinese urban community, offering a context-rich perspective that complements and challenges macro-level analyses.

## 1.5 Stucture of the Thesis

This thesis is structured into eight chapters. Following this introduction, Chapter 2 critically reviews the evolving concepts of governance and accountability, with a specific focus on their application during disaster management, particularly the COVID-19 pandemic. It identifies a significant gap in existing research, which often prioritises hierarchical forms of accountability at the national level, thereby overlooking the relational and socio-material practices at the local community level. The chapter argues that prevailing frameworks are inadequate for capturing how accountability is dynamically assembled, negotiated, and performed among street-level actors, including residents, volunteers, and non-human entities like digital technologies. Consequently, it proposes using Actor-Network Theory (ANT) in the subsequent chapter to reconceptualise accountability, thereby addressing the identified empirical and theoretical shortcomings.

Building on the critique and research gap established in Chapter 2, Chapter 3 develops the theoretical framework, drawing on ANT (Latour, 2005; Callon, 1986) to reconceptualise accountability as a performative effect of socio-material translations. It argues that ANT's principles—agnosticism, symmetry, and free association—enable a process-oriented examination of how accountability is continuously enacted and reassembled through socio-material networks of human and non-human actors. The chapter further posits that responsibility emerges as a distributed, contingent, and relational effect derived from these performative accountability networks. By reconceptualising accountability in this way, the framework provides a novel lens for empirically tracing how governance was negotiated and contested during the COVID-19 pandemic, moving beyond conventional, top-down models.

Guided by the ANT-informed framework, Chapter 4 details the qualitative methodology employed to investigate how accountability was dynamically constructed within an urban

community in Southern China during the COVID-19 pandemic. It justifies the use of a qualitative case study design to trace the formation, stabilisation, and reconfiguration of socio-material networks of human and non-human actors. The chapter details a multi-method approach—including snowball sampling, semi-structured interviews, ethnographic observation, and digital ethnography—tailored to "follow the actors" across different phases of the pandemic. It also addresses ethical considerations and positions ANT not just as a theory but as a flexible research strategy, setting a foundation for the empirical analysis.

Chapters 5 and 6 present empirical findings. Chapter 5 empirically examines the initial formation of a pandemic accountability network within the community during COVID-19. It traces the dynamic process through which a previously fragmented socio-technical order was reconfigured into a provisional governance assemblage by following Callon's (1986) four moments of translation. The analysis demonstrates how accountability was performatively enacted through the emergent interactions of heterogeneous human actors — such as RC staff and residents — and non-human actors — including health code algorithms, quarantine seals, and WeChat. Ultimately, the chapter reveals how this network achieved a fragile, contested stability by establishing hybrid spokespersons and artefacts that distributed and enforced new forms of responsibility and control. Chapter 6 presents that this temporary stable network underwent a phase of destabilisation as policies shifted towards "Precision Prevention." This disintegration was driven by policy-device misalignments, decaying digital infrastructures like health codes, and pervasive actor fatigue, which collectively eroded the network's moral and operational coherence. However, rather than collapsing into chaos, this rupture catalyzed a contentious yet generative reassembly of accountability. Through grassroots improvisation, frontline staff and residents reconfigured socio-material arrangements—transforming tools of control into negotiable boundary objects and weaving low-tech solutions with relational care.

Chapter 7 then synthesises the previous empirical findings to advance a performative understanding of accountability, conceptualised not as a static attribute but as an emergent, socio-material accomplishment. Drawing on ANT, it argues that accountability is continuously enacted through the dynamic associations of human and non-human actors, such as health codes, quarantine seals, and community volunteers. The analysis demonstrates that responsibility is fluidly displaced across time, actors, and affective

intensities, rather than being fixed or individually possessed. Ultimately, the chapter challenges top-down governance models and reinterprets state control and citizen compliance as networked achievements, highlighting ANT's value in revealing the mundane, affective, and material dimensions of governance, especially under crisis conditions.

Finally, Chapter 8 serves as the concluding section of a thesis, synthesising the research findings and their broader implications. It begins by recapping the study's aims and core findings regarding the dynamic, socio-material nature of accountability during the COVID-19 pandemic. The chapter then outlines the research's theoretical and empirical contributions to critical accounting, public governance, and ANT itself, before addressing the study’s limitations and proposing several avenues for future research. Finally, it closes with reflective remarks on the research journey, emphasising the adaptive and iterative process of inquiry undertaken.

# Chapter 2: Governance, Accountability, and Disaster Management

## 2.1 Introduction

The COVID-19 pandemic has not only been an important public health crisis but also a critical moment for re-examining the mechanisms of governance and accountability in times of disaster. As outlined in Chapter 1, the pandemic exposed the limitations of conventional, top-down accountability frameworks, particularly in highly dynamic and localised contexts such as urban communities in China. While national-level responses have been widely documented (Ahrens and Ferry, 2021; Mitchell et al., 2021), there remains a significant gap in understanding how accountability is constituted, negotiated, and performed at the micro-level of everyday practice.

Existing scholarship has tended to focus on formal, calculative forms of accountability—such as reporting infection rates, mortality statistics, and compliance metrics—which often overlook the nuanced, relational, and socio-material dimensions of accountability-in-practice (Baker, 2014; Yu, 2021). As noted in the introduction to this thesis, the Chinese context presents a compelling case, where state-led digital surveillance systems (e.g., health codes) and community-based organisations (e.g., Residents Committees) intersected to produce complex accountability arrangements (Qin and Wu, 2021; Chan, 2021). Yet, much of the extant literature relies on official documents and media sources, thereby privileging the perspectives of state actors and overlooking the agency of local residents, volunteers, and non-human actors (e.g., technologies, artefacts) in shaping accountability networks (Ahn and Wickramasinghe, 2021; Ahmad et al., 2021).

This chapter seeks to address this gap by reviewing key literature on governance, accountability, and disaster management, with a specific focus on the COVID-19 pandemic. It aims to situate the present study within broader academic debates while also identifying

the theoretical and empirical limitations that this research seeks to overcome. In doing so, it builds on the foundational concerns raised in Chapter 1, particularly the need to move beyond reductive, principal-agent models of accountability and towards a more situated, practice-based understanding.

The chapter is structured as follows. Section 2.2 examines the evolving notion of accountability, tracing its conceptual development from hierarchical forms to more socialised and relational understandings (Roberts, 1991; Munro, 1996; Messner, 2009). Section 2.3 explores the relationship between accountability and governance, highlighting how shifts in public sector governance—from New Public Management to network-based models—have redefined accountability mechanisms (Rhodes, 1997; Kooiman, 2002; Bovens, 2007). Section 2.4 reviews literature on disaster management, emphasising the role of accounting and accountability in crisis response and recovery, and critically examining the tension between calculative and narrative forms of accountability (Sargiacomo et al., 2014; Baker, 2014; Taylor et al., 2014). Finally, Section 2.5 narrows the focus to studies on the COVID-19 pandemic, synthesising emerging insights and identifying persistent gaps, especially regarding localised accountability practices and the role of non-human actors.

By engaging with these bodies of literature, this chapter lays the groundwork for the theoretical framework developed in Chapter 3, which draws on Actor-Network Theory (ANT) to reconceptualise accountability as a performative effect of socio-material translations. Ultimately, this review aims to justify the need for a empirically grounded investigation into how accountability is assembled and enacted within local communities during crises such as the COVID-19 pandemic.

## 2.2 On the notion of accountability

Accountability has been a subject of extensive scholarly inquiry across multiple disciplines for several decades (Roberts and Scapens, 1985; Roberts, 1991; Sinclair, 1995). Research in this area typically explores the social relations between actors engaged in a form of contract concerning resource use or the fulfilment of specific responsibilities. Consequently, debates have continually evolved regarding how these relationships can be conceptualised across diverse contexts, with scholars employing competing theoretical perspectives to advance the literature substantially (Roberts, 2006). This section examines these developments to situate and refine the research questions of this study.

Accountability has been widely discussed. It has permeated academic advancements and as well as public debates. Despite this development, there is no consensus on the precise definition of accountability (Sinclair, 1995; Cooper and Owen, 2007). The lack of agreement on this concept may be attributed to Sinclair's (1995) observation that accountability can take various forms depending on the context. Nevertheless, in an attempt at defining accountability, Munro (1996, p.287) discerns that it is the "process of being called to account to some authority for one's actions." Beyond this definition, Mulgan (2000) breaks down this definition into four distinct processes. Firstly, accountability involves an external dimension, whereby individuals are accountable to an external authority. This implies that subordinates are obliged to explain the reasoning behind their actions, and superiors engage in scrutinizing these explanations. Secondly, accountability entails social interaction and communication between the individual providing the account and the individual receiving it. This interaction establishes a principal-agent relationship. The third process emphasises the authority of the recipient of the account (accountee) and the corresponding obligation of the provider (accountor) to furnish information. The accountee's role often involves decision-making and overseeing the accountor's activities, suggesting a hierarchical structure (Mulgan, 2000). Lastly, the fourth process entails the account provider (accountor) being answerable to the account receiver (accountee) and assumes responsibility for the content of the report (Mulgan, 2000). Typically, these reports are formal and are commonly presented in the form of coded representations, such as numerical data or financial statements. They are employed

to assess the performance of the accountor (Munro, 1996).

For the above process-oriented breakdown of accountability, Roberts (1991) defines it as a formal hierarchical form of accountability. It is usually associated with, and embedded in a formal hierarchical structure within the organisation. The individuals or units' groups are controlled (held accountable) by someone with relevant authority to do so, granted by the superior status in the corresponding organisational hierarchy. Romzek (2000, p.23) defines this accountability relationship as "based on close supervision of individuals who have low work autonomy and face internal controls," which is firmly grounded in the respective hierarchical organisation. In this context, individuals are seen as either superiors or subordinates, with superiors often trying to maintain power in their hands and subordinates trying to climb the organisational ladder to gain wider power. Specifically, this process often relies on calculative practices, such as formal reporting and quantitative assessment, through which superiors evaluate subordinates' performance (Romzek, 2000). However, hierarchical accountability is not reducible to calculative accountability, it also encompasses such as authority structures, compliance mechanisms that extend beyond mere calculation (Roberts, 2001b).

The above interpretation and decomposition of accountability is normative, but tends to be non-critical (Roberts, 1991). Accountability is defined as a formal process or relationship structured between certain accountors and accountees, while the influence of context and moral obligations on the accountors is often ignored (Munro, 1996). As a result, accountors are held responsible only for the accounts they provide, which may encourage selective or strategic reporting (Baker, 2014). Similarly, accountees may determine consequences based solely on the final report, neglecting the broader ethical implications of the accountors' actions (Messner, 2009). In such frameworks, especially those heavily reliant on calculative practices, accountors may fail to engage in self-reflection or consider the wider consequences of their actions on others, focusing instead on producing results that meet the expectations of accountees (Roberts, 1996). Consequently, this normative understanding often overlooks the moral and ethical obligations inherent in accountability relationships

(Roberts, 2001). In response, Roberts (1991) proposes an alternative conceptualisation termed the “socialising form of accountability.”

Socialising forms of accountability drag people out of their self-absorption and instruct them to pay more attention to the consequences of their actions on others (Roberts, 1996), which develops a more sophisticated form of accountability. In this form of accountability, individuals develop a sense of interdependence with others, thus illustrate that accountability is related to one's moral responsibility to others (Roberts, 2001). An interpretation of the socialising form of accountability is vital because it provides an insight into why accountability without moral responsibility is inconsequential.

Building on this conceptual groundwork, accountability is also widely articulated as “the giving and demanding of reasons for one’s conduct” (Roberts and Scapens, 1985, p. 447). This definition emphasises that individuals must take responsibility for both their actions and inactions, grounding accountability in the rationale behind behaviour. Importantly, this process of giving and demanding accounts is not a linear or finite exchange but a continuous and recursive interaction. As Willmott (1996) suggests, accountability constitutes an ongoing process of “providing and receiving accounts” within social relations, whereby the iterative nature of account-giving continually reshapes both behaviour and outcomes. Roberts (2001) further contends that moral responsibility to others underpins this process, shaping the individual’s role as an ethical subject. Since actions are never isolated, individuals are compelled to reflect on how their conduct affects others, fostering a sense of reciprocal obligation (Roberts, 2001b, 2003, 2009). Critical self-questioning—such as how one’s actions impact both self-interest and others, and whether others benefit—shifts the focus of accountability from the self to a broader social context. Thus, individuals become accountable not only for what they report but also for the wider effects of their actions (Roberts, 1991, 2003).

Based on the above, this study found that these discussion of accountability in either classification and definition lies in the description of the mutual influence between the

accountor and the accountee. The accountor processes power to hold the accountor to account, and the accountee is also influenced by previous accounting results and personal moral perceptions, which could have direct impacts on the final accounts provided. As Roberts' (1996) decription, accountability could be the varied social interactions, through which human beings remind each other of their mutual interdependance. That is, while the traditional view of accountability is that the ultimate aim of accountability is to 'hold someone accountable' (Mulgan, 2000), in this ongoing interaction and interdependence, accountability is never a one-way act, but a mutual exchange relation (Messner, 2009). At this point, therefore, accountability is bi-directional and heterogenous relationships that exists between different parties. The remaining issues are, what factors influence the effectiveness of this relationship and how this relationship maintained within its wider context, and what are the reasons and purposes for its creation.

Building on this relational understanding, accountability scholarship has expanded to encompass forms that move beyond hierarchical and principal-agent models, particularly in contexts of public service, crisis response, and community engagement. For instance, downward accountability emphasises the obligation of power-holders (e.g., governments, non-governmental organisations) to explain their actions and be responsive to the needs of citizens, beneficiaries, or vulnerable groups they serve, contrasting with upward accountability to superiors or donors (Brinkerhoff, 2006; O'Dwyer and Unerman, 2007). Closely related is beneficiary accountability, which focuses specifically on the duty toward direct recipients of aid or services, prioritising their voices and experiences in assessing organisational conduct (Yates and Difrancesco, 2022). These forms highlight a shift towards inclusivity and answerability to those affected by decisions. Concurrently, ethical accountability calls for a deeper moral responsibility, urging actors to consider the broader social, emotional, and psychological consequences of their actions beyond formal reporting (Messner, 2009; Roberts, 2001). In practice, this often manifests as personal accountability —an internally driven sense of duty and care observed among volunteers and frontline workers, which can motivate adaptive action even in the absence of formal oversight (Yates and Difrancesco, 2022). These conceptual developments are crucial for

understanding accountability in complex, networked settings such as disaster and pandemic response, where rigid top-down mechanisms frequently prove inadequate.

While a wide range of literature discusses what accountability actually means, the content of accounts, and the diverse forms it takes, some scholars have begun to focus on the limits of accountability, that is, whether greater accountability is always desirable (Messner, 2009; Woods and Narlikar, 2001; Ahn and Wickramasinghe, 2021; Joannides, 2012). For instance, the importance of the actual content and practice of accountability is highlighted by Messner (2009) in his paper, and he argues ethical issues arise not only in the 'what' of accountability but also in the 'how'. That is, for accountability, which is usually interpreted as “giving and demanding reasons for one’s conduct”, ethical considerations are not only relevant to the type of demands to which the accountable self belongs, but also the raised way and extent of the demands. Messner (2009) likewise discusses the broadening and enrichment for the content and procedures of the accounts in the process, and also the “opaque selves" and "exposed selves" in relation to previous theories, the conclusion is that the unlimited extension of responsibility to things that remain opaque, and the complex weighing of different accountability by the accountable self, may make a 'perfect' accountability cause moral burden for the subject. Therefore, in order to avoid what Butler (2005) calls “ethical violence”, it is crucial to acknowledge the limits of accountability in practice.

Beyond the discussion concerning the definition and limits of accountability, the concept is frequently shaped and contested by the context in which it operates (Sinclair, 1995). Consequently, scholars have developed a wide array of conceptual frameworks to capture its diverse manifestations across different settings—ranging from those emphasising positive contributions, such as good governance (Brinkerhoff, 2006), to more critical perspectives highlighting accountability deficits (Mulgan, 2014), shadows (Schillemans, 2008), pathologies (Koppell, 2005), dilemmas (Kilby, 2006), and promises (Dubnick and Frederickson, 2010). Among these, the relationship between accountability and governance remains a central and recurring theme. As Woolgar and Neyland (2013, p. 104) assert,

accountability is considered “a cornerstone of governance,” serving to guide, control, and legitimise the exercise of authority by both state and non-state agencies.

For this study, specifically aiming to examine the accountability and governance mechanisms employed within local communities in response to the COVID-19 pandemic, it is essential to explore how these two concepts interrelate, evolve, and propagate within practical settings (Bovens, 2007; Kooiman, 2002). Understanding this dynamic is crucial for analysing the effectiveness and legitimacy of community-level actions during crises.

Similar to accountability, despite extensive academic debate since the 1980s, 'governance' remains a controversial concept with no precise definition (Goddard, 2005; Meuleman, 2008). It has continued to change and evolve over the last forty years and is consistent with its shifting role and paradigm (Parker and Gould, 1999). The joint discussion of accountability and governance practices is often placed within the public sector to examine how accountability can make particular groups or things accountable and ultimately govern them effectively (see for example, Barrett, 2002; Kulshreshtha, 2008; Almquist et al, 2013; Matei and Drumasu, 2015). Historically, accountability within the public sector is considered to be rooted in bureaucratic centralised, hierarchical structures of power (Jarvis, 2004). In this context, officers are accountable to their superiors, who can impose sanctions for breaches of rules and objectives. Governance here implies stuctures that define stakeholders’ responsibilities and competencies, and tools such as internal control and external accountability systems to monitor progress (Mulgan, 2000). Notebly, the issue of transparency included in the governance process is often the focus of public accountability discussions, with the need to hold higher actors answerable for their actions and to accept the evaluation by those affected (Roberts, 1991; Messner, 2009).

Subsequently, a crucial node at which the discussion of public sector accountability and governance was seen to be changed and extended was the introduction of the New Public Management (NPM) in the 1990s (see World Bank, 1992; Broadbent and Guthrie, 2008; Almqvist et al., 2013). The boundaries of the concept of the 'public sector' have been

expanded, along with its governance structures, responsibilities, controls and accounting techniques (Broadbent and Guthrie, 2008). Similarly, the discussion of accountability goes beyond the traditional 'principal-agent relationship', as public sector actors may need to be accountable to both internal and external stakeholders (Broadbent and Guthrie, 2008; Almqvist et al., 2013). Nevertheless, such reforms introducing NPM are not considered to be effective in promoting transparency and improving accountability in public sector management, as the mainstream focus in developing countries remains on hierarchical accountability and governance (Almqvist et al., 2013; Bakre et al., 2017).

The increasing shift towards network forms of governance in the public sector in the 21st century is linked to the change from 'government' to 'governance' (Kooiman, 2002; Rhodes, 2007). Governance reflects a move from institutional arrangements based on hierarchical orders to network forms of governing. It here goes beyond hierarchical steering by the state to include multiple “networks” of actors (Sørensen, 2007). Accountability in this context is defined by Aucoin and Jarvis (2005, p.36) as, “parties involved in shared authority and responsibility ... accountable to one another for the discharge of their respective responsibilities in the collective undertaking”. In this vein, more collaborative forms of governing are implemented, involving more informal and fomal arrangements. At the same time, the interaction between multiple stakeholders is iterative, actors become accountable to each other as their involved in a partnership (Boven, 2007).

This section has provided an overview of the discourse on accountability and governance within the public sector since the 1980s. It is important to note, however, that governance constitutes a broad concept that is not limited to the public sector alone. Its conceptualisation is closely tied to specific practical contexts and the accompanying accounting techniques employed in each setting. Building on this discussion, the following section will examine in greater detail the evolving definition of governance, as well as its interrelationships with accounting and accountability mechanisms.

## 2.3 Governance and Accountability

Governance has become one of the buzzwords in contemporary social sciences. Just like accountability, the actual meaning of governance is yet to be defined despite the substantive discussion and debate (Meuleman, 2008). As Bouckaert et al. (2002) puts it, governance could be a dynamic concept since “... is an analytical concept that may be studied in every period throughout history, rather than a new model for societal guidance and control" (p. 311). Hence, for this study, to examine the governance mechanism of pandemic preparedness and control in the local community, it is crucial to understand the interpretation of governance in different contexts and the accounting and accountability systems associated with it.

Generally, literature drawing on governance ideas could divide into two corporate/micro level governance and national/macro level governance. To indicate management and control issues embeded in the contexts of corporations, the term corporate governance is established and implied a concept of structures, rules, procedures, and mechanisms for the proper steering and controlling of corporations (Okolie, 2014; OECD, 2004). For this level of governance, diverse entities have developed and enacted codes for the public sectors. As the instances, the Chartered Institute of Public Finance and Accountancy (CIPFA) has proposed best governance practice for local government in the UK (CIPFA, 2001); the Public Sector Committee of the International Federation of Accountants (IFAC) has also proposed good governance arrangements for the public sector in general (IFAC, 2001). Specifically, here CIPFA (2001, p. 1) defines corporate governance in the context of local government authorities as "the system by which local authorities direct and control their functions and relate to their communities".

Similarly, principles and codes of corporate governance for the private sector have been issued by diverse countries and international organisations (For example, Cadbury Report, 1992; Hampel Report, 1998; and Turnbull Report, 1999 in the UK; OECD, 1999). Notably, following corporates scandals involving high profile companies such as Enron, WorldCom,

Xerox, and Tyco, corporate governance has become a prominent focus in most economies across the world (Coates IV, 2007). This has resulted in the revision of existing codes such as the OECD Principle of Corporate Governance in 2004, and the issuance of more detailed and binding codes in the form of laws such as the Sarbanes-Oxley Act in 2002 in the US (Jesover and Kirkpatrick, 2005). Although the descriptions of different corporate governance codes and their associated best governance practices vary due to different national economic and social environments, their common overriding objective is to ensure the successful operation of the businesses and thereby protect investors and stakeholders (Abu-Tapanjeh, 2009). In it, previous literature and research has highlighted the vital contribution of accounting in the area of corporate governance. Specifically, financial accounting is considered to be one of the most important elements and components of the corporate governance process (Sloan, 2001).

Since the 1980s, with the economic and financial difficulties faced by governments, mainly in developing countries, governance at the national level has received increasingly widespread attention (World Bank, 1989, 1992). The key to economic development is considered to be proper governance by related political institutions (Kemal, 2016). To be more specific, the discussion and research on governance has been placed on several subjects such as the way in which power is acquired and exercised, the efficiency of which public resources are managed, and the relationship between public institutions, political officials and the public (Rotberg, 2007; Kemal, 2016). Among these, the term “good governance” has been frequently cited, especially by the World Bank and other international development agencies, as one of the important conditions for accessing loans or aid. Here, the World Bank recognised good governance as a whole mechanism consisting of effective functioning of state institutions, participation of the public in decision-making, political accountability, an efficient public sector and a competitive private sector, and maintenance of the rule of law (World Bank, 2000). Specifically, governance in this context be defined as ways of using powers in the process of management of national economic and social resources. This definition placed the emphasis on the expected outcome of governance, which is the “development”, as the

common sense that good governments are those who achieve actual development.

For the national and more macro level of governance, extensive research has given other definitions. Examples include Rotberg (2007, p.71) who defines governance as “the term used to describe the tension-filled interaction between citizens and their rulers and the various means by which governments can either help or hinder their constituents’ ability to achieve satisfaction and material prosperity”, which emphasises the interaction and relationships between governments and their citizens; Kaufmann et al. (2011, p. 2011) are of the view that governance encompasses the “traditions and institutions by which authority in a country is exercised”, which placed the focus on a certain cultural and social tradition influences the country's governance mechanisms. These parses of governance provide us with some ideas to consider the meanings it is given in different contexts, and the practical factors that influence its functioning. Nevertheless, more directly relevant to this study, governance in some contexts can hardly be placed at the level of a specific corporate organisation or states and the governments, but rather as a socialised, jointly formed mechanism of diverse participants and actors.

Some research thus considers governance as a network-based model of collaboration (see for example, Rhodes, 1997; Kooiman, 2002). Within such networks, independent organisations or parties continue to interact with each other based on commonly negotiated and agreed rules or trusts (Rhodes, 2000). In particular, networks often emerge from a common interest or interdependence between network participants of different parties, who need to exchange resources or work in synergy to achieve a common goal. Considering such forms of governance, Hirst (2000) uses the term `negotiated social governance' to describe it. Additionally, he argues that there is no specific application scenario for it, as these forms of governance could be detected at both macro and micro level, and could involves different groups. Examples include trade association, labour unions and community groups (Hirst, 2000). Drawing on such ideas, Rhodes (2000) further proposed a socio-cybernetic systems of governance. He additionally emphasises the social coordination role of governance, which generates actions that are voluntarily coordinated

by individuals and organisations through multiple actors, rather than through a single central actor. In this vein, the role of 'government' in traditional governance mechanisms is extended to the interaction between multiple actors, and the existence of a single sovereign authority is not necessarily required.

In particular, under these broader forms of network-based and collaborative governance, a wider range of stakeholders are introduced. Consequently, just like mentioned in the previous section, accountability in these contexts can no longer limited to a simplex principal-agent relationship, as a single actor can be accountable to several internal and external actors. Considering such issue, substantive literature has investigated the wide range of forms of accountability are embedded in such governance mechanisms. Detected from these study, accountability can be internal or external (Romzek, 2000; Romzek and Dubnick, 2018); direct or indirect (Polidano, 1998); and vertical/hierachical or horizontal (Barberis, 1998; Bovens, 2007, 2009; Hodges, 2012), depending on the type of relationship being prioritised. What is more informative for this study, however, is that we should pay attention to the concept of social accountability. There is a broader public and civic engagement embedded in collaborative governance, which enables the public organisations to “embrace broader accountability for their wider social impacts encompassing the accountability for the impacts their actions have on other organisations, individuals and the wider environment” (O'Dwyer and Unerman, 2007, p. 450).

At the same time, beyond the forms of accountability embedded in governance mechanisms, there are corresponding accounting technologies issues associated with them. Traditonally, the use of accounting techniques in governance is often considered to be relevant to the management of organisational performance. Literature and research often include the use of financial accounting techniques within the private sector to provide statistics and disclosures on company operations (Bushman et al., 2000; Sloan, 2001), and the provision of accounting information to assist public sector and government decision-making (Giroux and McLelland,2003; Mattli and Büthe, 2005). However, with the development of emerging technologies in the 21st century, widespread research calls

for a wider range of accounting techniques and move towards to the new 'digital governance' forms (Dunleavy et al., 2006).

Accounting technology has thus introduced new digital governance initiatives such as online government (Vanhommerig and Karré, 2014). Citizens can use the internet for governance participation and engagement, such as online consultation and e-voting, as well as receiving the public service provision. While it is generally accepted that the introduction of this more emerging accounting technology has brought about increased transparency and openness in the governance of governments and public organisations (Agostino et al., 2022), more research has been limited to a macro perspective. For example, more directly in the context of the pandemic, the use of big data technologies for data collection and surveillance assemblage construction, the application of official Twitter and Facebook pages to communicate information, etc.(Ahn and Wickremasinghe, 2021; Landi et al.,2022). These studies mostly focus on how the emerging accounting techniques is being carried out at the national level and by governments in their governance mechanisms. However, limited literature pay attention to how emerging accounting means can play the role in the construction of governance and related accountability systems in a more local, smaller-scale community, which will be a direction for future consideration.

## 2.4 Disaster Management: its implications for Governance and Accountability

In the vast academic literature, the term 'disaster' and the corresponding 'disaster management' is often mentioned. However, defining disaster accurately is much more difficult than subjectively perceiving what a disaster is, as disasters can mean many things to people (Quarantelli, 1985; Perry, 2007). In general terms, a disaster can be recognised as any event that has negative consequences (Perry, 2007). It could be the sudden natural events, technological failures, wars, etc. that can cause serious damage to human life, livelihoods, property and the environment due to their negative consequences. In particular, the occurrence of such events and their severe consequences often take place exceed the

capacity of communities and all their resources (Perry, 2007). In the period following the event, the communities and organisations that bear the consequences may be unable to carry on with their normal lives and daily routines, requires appropriate agencies and departments to take action against these serious consequences, which called “disaster management”.

Contemporary disaster management often consists of four main components: mitigation, preparedness, response, and recovery, which are also the phases in a disaster managemet circulation (Coppola, 2007). Mitigation is considered to be the basis of disaster management (Federal Emergency Management Agency, abbreviated as FEMA hereafter, 2010), as its main purpose is to prevent emergencies and to minimise the negative effects of disasters. A similar component of this pre-disaster predecessor work is preparedness. It is often associated with the preparation to handle with emergencies and to let people know what they should do when disaster strikes (FEMA, 2010). However, it is the latter two of the four components that have attracted widespread academic attention and discussion, that is, how people respond in the aftermath of a disaster and how these responses help people recover from the disrupted order and system (see Gerber, 2007, Hall et al., 2016, Eller et al, 2018).

The reseach field of accounting and governance has not escaped from this trend. Since the early 2000s, a growing body of literature has examined the role of accounting, accountability and governance in the context of natural disasters, financial crises and humanitarian catastrophes (see for example, Bracci et al., 2015; Linnenluecke, 2017; Matilal and Adhikari, 2018), explored how accounting technology and management systems can effectively help governments and relevant authorities to respond to and recover from the disaster. For instance, Walker (2014) discusses how accounting served as an important facilitative technology to help communities recover from prolonged droughts that were declared as a national emergency in the United States of the 1930s. Walker (2014, p.605) uses the concept of heroic bureaucracies, defined as “a government organisation which uses public monies to address a fundamental problem in a new and socially

progressive way", to show how an experimental government programme for the resettlement of dislocated families was conceptualised and implemented. Accounting tools such as home planning, record keeping and budgeting hereby served as key instruments to assess the progress of participating families and to monitor the performance of the overall programme (Walker, 2014).

In another historical study on the interrelationship between accounting and crisis, Sargiacomo et al. (2014) looks at the earthquake disaster in the Abruzzo region of central Italy in 2009, examining the role of accounting practice in the context of a natural disaster and subsequent emergency-relief effort. Through document analysis and interviews with key participants, the actions of government and relevant departments in the aftermath of the disaster were collected and collated in a chronological manner. What can be seen from that is that although the more standardised accounting elements of invoicing, budgeting, and financial reporting were not established until two weeks after the disaster, a series of calculations, inscriptions, and other artifactual representations were mobilised immediately after the outbreak. The country was announced to enter a 'state of risk' and codes are introduced to determine the prioritisation of affected areas and the related allocation of resources (Sargiacomo et al., 2014). Beyond traditional accounting techniques, however, the authors looked at the practice of a moral economy characterised by inequality and suffering in such extreme post-disaster situations, and how accounting operates in this context. What can be observed is that although agency accounting actors spontaneously introduce themselves mentally and emotionally into the allocation of resources to respond to the "legitimate needs" of the affected population, over time accounting gradually returned to a traditional focus on the calculative figures and report. Tracing the reasons behind this, some argue that in emergency and extreme situations, resources are largely allocated by governments (Taylor et al., 2014; Sargiacomo et al., 2014). Political reasons may lead them to continue to account for financially-based performance measures to support the 'effectiveness' and 'timeliness' of their work, and the psychological situation of the wider disaster-affected population may not be the first consideration. Nevertheless, such intangible suffering requires broader accounting systems and techniques to measure

them in.

Similar concern has raised by Taylor et al. (2014). They place the discussion in the context of the 2009 'Black Saturday' bushfires in Australia and explore how governments and NGOs take responsibility for the victims in the period of recovery. Through the content analysis of the working reports issued by the government and NGOs, what can be found is there is a wealth of numerical and graphical information to describe and evaluate financial and performance information. Although for government agencies, as well as donors, sponsors, foundations, etc., these reports provide detailed accounts, predictable result is that such reports are classified as very difficult to read for most of the affected population, unless the reader has prior expertise in the subject (Taylor et al., 2014). The government tries to showcase its work and performance in the report, conveying to stakeholders that funds and resources are being applied in an effective manner. But such over-calculated data and graphs are not effectively perceived by the affected population and thus can only bring limited psychological relief and recognition.

Combined, these studies provide insights into the use of accounting as a facilitative technology for disaster response and recovery. Simultaneously, widespread discussion and questioning has been placed on whether accounting in these contexts overly focuses on the more 'upward' stakeholders, ignoring the wider, suffering others and the ethical considerations associated with them (Baker, 2014; Sargiacomo, 2014; Sargiacomo et al., 2014; Taylor et al., 2014; Walker, 2014). That is, while calculative practices dominates official disaster responses, there is growing recognition of the need for downward accountability to victims—a form that privileges the narratives, needs, and feedback of affected populations (Baker, 2014; Sargiacomo et al., 2014). This aligns with ethical accountability, which urges responders to acknowledge the moral dimensions of suffering and recovery. In practice, however, the tension between quantitative reporting and moral responsibility often leads to an accountability gap, where victims remain passive recipients rather than active participants in accountability networks.

Drawing on such concern, other studies focus on the practices of different notions of accountability in the disaster management. Despite the diverse disasters faced, the importance of the distinction between 'calculative accountability' and 'narrative accountability' in disaster governance has been highlighted (Everett and Friesen, 2010; McKernan and McPhail, 2012; Kamuf, 2007; Sargiacomo et al., 2014; Baker, 2014). In this case, ‘calculative accountability’ focuses on objective facts, corroborating evidence and data, etc. (Baker, 2014). Examples include the number of people displaced and affected by a disaster, the cost of damaged products and the accounting records of resource allocation. This part of accountability, in addition to being more oriented towards traditional financial reporting bookkeeping functions, includes the creation of regulations and legislation to ensure that governments and organisations are accountable to the stakeholders within their sphere of responsibility (Baker, 2014; Sciulli, 2018; Sargiacomo, 2015, Gevaert et al., 2021). In contrast, ‘narrative accountability’ in disasters is related to stakeholder sentiment and feedback, such as the judgement of disaster victims on the effectiveness of relief efforts (Everett and Friesen, 2010; McKernan and McPhail, 2012). However, the idea of accountability contains threads of both calculation and narration: counting and accounting, recounting and explaining oneself. As Boland and Schultze (1996, p.312) argued, that calculative and narrative are always intertwined in accountability: “each supplying the conditions for and being enabled by the other”. In practice, these two types of accountability and new governance paradigms, including New Public Governance (NPG), are seen as building 'collective accountability' that can be effectively used to manage disaster environments (Jayasinghe et al, 2020; Sørense, 2012).

Nevertheless, despite the suggestion of collective accountability, that we know what an effective system that encompasses accountability beyond the traditional should look like, monolithic forms of accountability still dominate the prevailing case studies. As an instance, Baker’s (2014) analysis of the Hurricane Katrina case directly describes the status of accountability as ‘breakdown'. It is worth noting that Baker (2014) here argues that the cause of the breakdown was not the hurricane itself, but the stress it generated that led to the failure of the pre-settled accountability system. That is, there was a lack of

communication between the various governments and the wider affected population, which ultimately led to thousands of deaths and other poor conditions for those affected (Baker, 2014). More specifically, the reasons for this phenomenon stem to a large extent from the government's over-reliance on the aforementioned "calculative accountability". When making decisions, the supporting information came only from the book value of property and figure for mortality, damage rates etc., and thus ignored the subjective feedback of the public. The mayor of New Orleans, where the hurricane occurred, demonstrated a lack of moral responsibility by failing to act responsibly on behalf of the victims in the first place (Baker, 2014). Notably, this phenomenon is not uncommon in previous studies. Substantive of opinion suggests that there is a general preference for calculative accountability among public officials within the US federal government system (see for example: Alexander, 2006, Cutter, 2006, Wachtendorf and Kendra, 2006). Government officials may prioritise calculative accountability, such as statistical reporting and performance metrics, over moral and narrative forms, thereby deflecting responsibility and obscuring ethical obligations (Baker, 2014; Messner, 2009). This tendency reflects a preference for quantifiable evidence within hierarchical accountability structures.

It is worth noting that this over-reliance on calculative accountability in disaster management is not confined to government work. More recent research comes from Gevaert et al. (2021) exploring issues of fairness and accountability for Artificial intelligence (AI) in disaster management. The application of this new tool relies heavily on natural, built and demographic data to model disaster risk, which could lead to biases at the ethical and social level and ignore the subjective needs of people (Gevaert et al., 2021). Although as McKernan and McPhail (2012) puts it, accountability has been a predominantly calculative and quantitative practice from the outset, responding to and managing a disaster involves dealing with a wide range of victims, which is necessary to bring “responsible caring for the other” into the concept of accountability. To be more specific, this indifference to subjective feedback from victims and neglect of ethics, could be one of the causes of victim suffering in recovery period of disaster situations (Safari et al., 2020).

Various researchers explored the complementary role that accounting techniques and accountability mechanisms can play in the context of disaster response and recovery. There is no doubt that we need detailed and prudent accounting measurements to provide bookkeeping reports to help recovery efforts move forward and rebuild daily life, which underpins calculative accountability practices (Baker, 2014; Sargiacomo, 2014; Sargiacomo et al., 2014; Taylor et al., 2014; Walker, 2014). Nevertheless, the call that comes from these studies is to pay more attention to the ethical dimensions, going beyond the traditional calculative accounting practices. People's subjective needs in the aftermath of a disaster and feedback on phased relief outcomes, these narrative data should be factored into accountability considerations to create truly effective accountability mechanisms.

Furthermore, the role assigned to victims and local populations in much of the literature remains passive and homogeneous. The focus is predominantly on how governments and NGOs enact downward accountability to victims, often framed as a one-way process of providing accounts or relief (Everett and Friesen, 2010; Baker, 2014). While this literature rightly calls for incorporating victims' subjective perceptions, these groups are still predominantly viewed as vulnerable recipients rather than active participants in accountability networks. This perspective overlooks the potential for beneficiary accountability, where beneficiaries are engaged as active partners, and the role of personal and ethical accountability that emerges among community members and volunteers who often fill governance gaps during crises (Yates and Difrancesco, 2022). Future research could therefore investigate how local actors, including affected residents, exercise agency and co-construct accountability relations from below, moving beyond their framing as mere recipients of accountability.

## 2.5 Studies on the recent pandemic

The previous subsection discusses the extensive accounting literature that has explored the role of accounting and accountability practices in the context of unexpected disasters and emergencies since the early 2000s. And the COVID-19 pandemic, which is closer to ours and has sustained and knock-on effects, has attracted wide attention. As one of the most serious crises and disasters of the 21st century, the COVID-19 pandemic has unleashed unprecedented challenges on a global scale, necessitating robust accounting, accountability and governance mechanisms to navigate the crisis effectively. A wide range of academic literature in the field has examined the contribution of accounting and accountability techniques to the mitigation of the epidemic effects in diverse organisational settings. A section of the studies focuses on the use of accounting and accountability practices by governments and organisations to help make responsive decisions (see Mitchell et al., 2021; Ahrens and Ferry, 2021; Ahmad et al., 2021; Ahn and Wickramasinghe, 2021; Carungu et al., 2021), while other section of the literature regards on the changes and dangers observed in accounting and accountability practices during the pandemic, and the new forms, contents and means of accountability that have developed as a result (see Moscariello and Pizzo, 2022; Parisi and Bekier, 2022; Kober and Thambar ,2022; , Finau and Scobie, 2022). The following part will review several papers based on these two sub-themes.

Regarding the governments' COVID-related responses, Mitchell et al. (2021) applied a pragmatic constructivist (PC) perspective to examine the performance management practices in the UK, Germany and Italy. The authors matrixed the four dimensions of dimensions of the pragmatic constructivist (PC) (facts, possibilities, values and communication) against the four phases of the pandemic period (planning, anticipation, lockdown and loosening up) to examine different behaviours and related outcomes in these European countries. Results suggested that singularity of values in Germany was conducive to the clarification of the goals, and a focus on the acquisition of factual information enabled evidence-based generation of action possibilities. Consequently, Germany has been relatively successful in the fight against Covid-19 with the involvement of the government, scientists and the public (Mitchell et al., 2021). In contrast, the Italian

and British governments have been slower to act and react due to more pronounced pluralistic values. Responsive decisions are difficult to make, and only made based on the forcement of the severity of problem. From the perspective of PC, effective pandemic control requires a more precise system of performance management, which is constructed by integrating the facts, possibilities, values and communication of the society.

Compared to Mitchell et al. (2021), Ahrens and Ferry (2021) and Ahmad et al. (2021) offered more in-depth discussion on the UK's response to the pandemic. Drawing on the Foucault's schematic of government, the concept of apparatuses of security has been used in Ahrens and Ferry's (2021) paper to explore the accounting and accountability practices of the UK government's response to COVID-19. Results noted that the crucial role of accounting is that governments can measure the severity of a crisis through reporting (such as monthly statistical reporting and budgeting flexibilities) and make calculations to support the response to the crisis. Nevertheless, criticism is also inflicted on it that the UK government only relied on the limited accounting tools, potential benefits of using in a timely manner the spending review and accountability tools are not reaped (Ahrens and Ferry, 2021). Consequently, calls have been made that the UK government should consider both value for money and social fairness in the future to ensure continued citizen support for government's action. Ahmad et al. (2021) also provided complementary analysis of the UK's response to the pandemic. Testing is the focus of attention and pointed to its dual role, both as an inscription of government performance and as a classification of pandemic risk. Particularly, it is observed that the role of inscriptions is testing initially played, it was driven more by political necessity than by scientific advice (Ahmad et al., 2021). Following the subsequent development of the national diagnostic infrastructure, testing gradually strengthened its classification role and provided calculative data to guide government measures (Ahmad et al., 2021). In this vein, testing was used as a means for UK government to govern actors and thus the epidemic at "multiple distances." Notably, similar to Ahrens and Ferry (2021), Ahmad et al. (2021) also suggested that as a "new normality", it is difficult for governments to govern populations effectively by focusing on fiscal targets and numbers, the demands for more public health services and social equity

will increase significantly.

Besides, the paper by Ahn and Wickremasinghe (2021) discusses how big data analytics (BDA) pushed the limits of accountability during the pandemic. They look at newer technological tools, explore the Korean government's use of big data to build surveillance assemblage to hold and control citizens accountable during the pandemic. Under such assemblage, the government, as the senior level in the accountability system, holds the more physiologically risky population accountable for their physical risks through the use of big data analytics (BDA) (Ahn and Wickremasinghe, 2021). Significantly, Ahn and Wickremasinghe (2021) highlight this push for the limits of personal responsibility may trigger privacy concerns. This leads future research to focus on whether the Chinese government has considered the boundaries of accountability, while achieving effective monitoring and accountability through various emerging means. That is, as Messner (2019) argues, whether more accountability is always desirable when considered in terms of the ethical dimension.

The above literature has revealed the role played by accounting and accountability practices at the different nation level. It needs to be acknowledged that different forms of accounting and accountability practices do provide governments with valuable information and data to respond to and control the epidemic. However, it is worth considering whether the information provided by such “calculative accountability” is sufficient, and whether governments are overly reliant on this information to demonstrate their 'competence' and to contest in politic dimension (see Ahrens and Ferry, (2021); Ahmad et al. (2021)). Considering such issue, Yu (2021) discusses the relationship between the biopolitical regime of governing death and calculating accountability in the COVID-19 era, notes that the number of deaths caused by COVID-19 depends on whether these people are recorded on the death certificate. She thus raises concerns about this form of accountability, which is based entirely on calculation. It recognises the power and interest in considering the death of people during a pandemic as a “state of exception” and normalises intervention techniques and measures for counting and measuring deaths (Yu, 2021). Thus, Yu (2021)

proposes that this calculation of accountability devours and dilutes people's grief and suffering, making accounting and accountability blind to the social and psychological costs incurred. Therefore, for research on accounting and accountability in pandemic crisis, it may not be comprehensive to limit the methods on policy analysis and documentary analysis at the national level, as described earlier. Through the collection of data from the press, government and institutional reports, as well as interviews with professionals and health workers, conclusions and concerns are easily placed on calculative data, for example economic expenditure or rates of infection and death. For each individual affected by the pandemic, how they are included in the local epidemic control network and how such a network is working, these questions need to be considered to further enrich the filed. The study will then be conducted through fieldwork with first level organisations and the discourse of ordinary people within the community, examine how lower-level organisations and people in the pandemic crisis process have constructed systems of accountability.

In addition to the above complementary role of accounting and accountability for government and organisational responses to a pandemic, it is widely argued that the pandemic per se has had a significant impact on accounting and accountability practices. Yates and Difrancesco (2022) shining a spotlight on a Spanish NGO that provides humanitarian support to homeless beneficiaries, suggested that there was a significant change in the way of providing beneficiary accountability. During the pandemic, beneficiary accountability is mainly discharged through the social interactions and assistance (actions). The NGO interviewed moved from a beneficiary-oriented approach to accountability to a personal accountability in relation to the volunteers involved (Yates and Difrancesco, 2022). It could be seen that accountability as a flexible tool could change rapidly in a state of social distancing. Moreover, in the time of social distancing and processes of 'self-isolation', the personal accountability from volunteers emphasises their notion of personally held, ethical accountability, and will therefore directly affect their emotions and feelings as well as those of the beneficiaries.

Apart from the shifting and change of the way of discharging accountability, academic also explores how social media and digital tools have been effective in extending accountability and enhancing performance during the pandemic. Landi et al. (2022) performed content analysis of the Facebook pages of major public institutions of Italy, the UK and New Zealand, and investigated why and how public health agencies used social media to promote dialogue accounting and public engagement during the pandemic. The results show that although social media is widely used as a communication tool in all three countries, it is only acted in New Zealand as a dialogical, bi-directional communication, rather than simply as a means of distributing information. In particular, the authors found that in New Zealand, this form of dialogue on accountability was effective in avoiding the spread of fake news.

The preceding review underscores several insights emerging from recent scholarship on accountability in the context of pandemic. First, while accountability has been conceptualised in increasingly relational and socialised terms (Roberts, 2001; Messner, 2009), empirical studies continue to privilege formal and calculative forms, especially in crisis settings. Moreover, despite the recognised importance of localised practices and non-human actors (such as digital technologies, artefacts, and data systems), the majority of pandemic-related research remains focused on national-level responses and state-centric perspectives (Ahrens and Ferry, 2021; Yu, 2021). This has left a significant gap in understanding how accountability is dynamically assembled, negotiated, and performed within the micro-level, everyday networks of local communities.

This gap points to the need for a theoretical lens that can trace the socio-material processes through which accountability emerges in practice. While existing frameworks—such as those emphasising narrative accountability (Baker, 2014) or network governance (Bovens, 2007)—offer valuable critiques, they often retain a priori distinctions between accountors and accountees, or between human and non-human entities. What is lacking is an approach that treats accountability as an ongoing achievement of heterogeneous networks, in which agency is distributed across both human and material actors.

This is where Actor-Network Theory (ANT) offers a promising pathway. ANT has been increasingly applied in accounting research to examine how accounting practices, technologies, and accountability relations are enacted through socio-material assemblages (Justesen and Mouritsen, 2011). The following chapter will elaborate on ANT as the core theoretical framework for this study, drawing on prior accounting research that has utilised ANT to analyse the emergent and distributed nature of accountability (e.g., Justesen and Mouritsen, 2011; Robson and Bottausci, 2018). This will provide the conceptual tools needed to investigate how accountability is enacted, distributed, and reassembled through socio-material networks during COVID-19—a question that remains under-explored in the current literature.

## 2.6 Conclusion

This chapter has reviewed key literature relating to governance, accountability, and disaster management, with a specific focus on the COVID-19 pandemic. It began by exploring the evolving conceptualisations of accountability, tracing a shift from hierarchical forms (Roberts, 1991; Munro, 1996) towards more relational and socialising understandings that emphasise moral responsibility and interdependence (Roberts, 2001; Messner, 2009). The chapter then examined the intersection of accountability and governance, highlighting how the transition from New Public Management to network-based governance models has redefined accountability mechanisms, expanding the range of actors and expectations involved (Bovens, 2007; Kooiman, 2002; Rhodes, 2007). In reviewing disaster management literature, a persistent tension was identified between calculative forms of accountability, which prioritise quantitative reporting and performance metrics, and narrative forms, which attend to the ethical, emotional, and experiential dimensions of crisis (Baker, 2014; Sargiacomo et al., 2014; Taylor et al., 2014). This tension became evident in the review of recent pandemic-related studies, where an over-reliance on top-down, calculative accountability mechanisms often rendered the lived experiences of local communities invisible (Ahrens and Ferry, 2021; Yu, 2021).

A consistent theme emerging from this review is that prevailing accountability frameworks remain inadequate for capturing the dynamic, contested, and often improvisational nature of accountability as it unfolds in practice during crises, particularly at the local level. Although the literature convincingly critiques the limitations of traditional models, a significant gap remains in empirically understanding how accountability — including its downward, beneficiary, ethical, and personal forms — is assembled, negotiated, and performed within the everyday practices of local communities. National-level analyses, which dominate the field, tend to overlook the specific ways in which street-level bureaucrats, community volunteers, residents, and non-human actors (such as digital technologies and artefacts) collectively negotiate accountability relations in real time (Ahn and Wickramasinghe, 2021; Yu, 2021). This is especially pertinent in authoritarian contexts like China, where state-led pandemic measures intersected with localised practices of interpretation, adaptation, and resistance (Zhai, 2023).

To address this gap, this study proposes the central research question, which is derived directly from the issues identified in the literature: “How is accountability enacted, distributed, and reassembled through socio-material networks during COVID-19 ?” Subsidiary questions further explore how technologies, legal devices, and community practices contribute to the formation and destabilisation of accountability relations, and what these processes reveal about the nature of governance under crisis conditions.

Answering these questions requires a theoretical lens capable of moving beyond predefined categories of accountors and accountees to trace the processes through which accountability emerges from dynamic interactions. Actor-Network Theory (ANT) is particularly suited to this task. Its core principles—agnosticism, generalised symmetry, and free association—provide a methodological framework for tracing how accountability is performed through constantly shifting networks of human and non-human actors (Latour, 2005; Law, 2009). ANT does not take accountability as a given structure but rather

investigates it as a continuous achievement, forged through processes of translation, negotiation, and material mediation (Justesen and Mouritsen, 2011; Robson and Bottausci, 2018). By focusing on the socio-material practices that constitute accountability, ANT helps uncover the subtle mechanisms of power, inclusion, and exclusion that traditional frameworks often miss (Mol, 1999).

Therefore, the following chapter will elaborate on ANT as the primary theoretical framework for this study. It will detail how its concepts enable tracing of the emergent and distributed nature of accountability within local pandemic response networks, thereby addressing the empirical and theoretical gaps identified in this review.

# Chapter 3: Theoretical Framework – ANT and the Performativity of Accountability

## 3.1 Introduction

Building on the critical review of accountability and governance literature in Chapter 2, which highlighted the limitations of conventional, top-down frameworks in capturing the dynamic and contested nature of pandemic response, this chapter establishes Actor-Network Theory (ANT) as the theoretical foundation for analysing accountability as a socio-material practice. Unlike traditional approaches that treat accountability as a fixed attribute or a hierarchical relationship, ANT enables a process-oriented examination of how accountability is continuously enacted, negotiated, and reassembled through networks of human and non-human actors (Callon, 1986; Latour, 1987). This perspective is particularly suited to addressing the central research question of this study by focusing on the micro-dynamics of governance often overlooked in institutional or macro-level analyses.

Actor-Network Theory (ANT), or the "sociology of translation," offers a distinctive theoretical lens for examining the co-construction of social and material realities. Originating within Science and Technology Studies (STS) in the mid-1980s, ANT has transcended its disciplinary roots to become a framework applied across diverse fields including sociology, political science, geography, and organisational studies (Callon, 1986; Latour, 1987). Its core strength lies in rejecting rigid dualism, particularly the separation of "social" and "technical" domain, and instead tracing how heterogeneous networks of human and non-human actors (e.g., technologies, institutions, texts) collectively enact phenomena through dynamic processes of negotiation, alignment, and stabilisation (Law, 1991; Mol, 1999).

ANT is uniquely capable of interrogating the performativity of accountability—that is, how accountability is brought into being through everyday practices, technological mediations, and affective relations (Latour, 2005; Mol, 1999). Whereas principal-agent models or institutionalist approaches tend to presuppose stable roles and structures (Bovens, 2007; Mulgan, 2000), ANT's principles of agnosticism, symmetry, and free

association allow researchers to trace how accountability emerges from uncertain and evolving situations, such as pandemic governance (Callon, 1986; Law, 2009). By refusing to privilege any specific actor or scale of analysis, ANT reveals how accountability is constituted through the interactions between policies, digital platforms, street-level bureaucrats, community volunteers, and residents—each contributing to the stabilisation or disruption of accountable arrangements (Latour, 2005; Orlikowski and Scott, 2014).

Furthermore, within ANT's relational ontology, responsibility is not a separate moral or philosophical concept but a distributed and contingent effect produced through the processes of accountability translation. As accountability is performed, enacted through networks of human and non-human actors, specific arrangements of responsibility are simultaneously configured: agency is delegated, roles are assigned, and obligations are negotiated. In this sense, responsibility emerges as a relational extension of accountability performances, its meaning and distribution shifting as actor-networks form, stabilise, and fracture.

This chapter provides the theoretical scaffolding for the empirical analysis that follows in Chapters 5 and 6. It elaborates how ANT's core concepts (e.g., translation, obligatory passage points, inscriptions, and actor-networks) offer vocabulary for unpacking the complex and often invisible work through which accountability is performed in crisis conditions.

The purpose of this chapter is twofold. Firstly, it establishes the suitability of ANT as the methodological approach for this study, demonstrating how its core principles (agnosticism, symmetry, free association) and conceptual toolkit (translation, OPPs, inscriptions) enable the tracing of dynamic socio-material controversies inherent in this study. Secondly, it advances the study's core theoretical propositions by reconceptualising accountability as a performative effect emerging from socio-material translations (Section 3.4), and therefore, responsibility as distributed, contingent, and relational across human and non-human actors within evolving actor-networks (Section 3.5).

The chapter is structured as follows: Section 3.2 contrasts ANT's core tenets with pre-existing technological/social determinisms and detailing the "sociology of translation."

Section 3.3 reviews ANT applications in accounting and governance research. Section 3.4 advances the study's central proposition, that accountability as a performative effect of socio-material translations. Section 3.5 extends this to conceptualise responsibility as distributed, contingent, and relational. Finally, Section 3.6 justifies ANT as the methodological approach, detailing its principles (agnosticism, symmetry, free association) for tracing dynamic controversies.

## 3.2 ANT – The Sociology of Translation

Actor-Network Theory (ANT), emerging prominently in the mid-1980s, represents a radical approach to understanding the complex interweaving of the social and the material (Callon, 1986; Latour, 1987). Developed initially by scholars situated within the interdisciplinary field of Science and Technology Studies (STS), ANT offered a novel lens for analysing the co-construction of scientific facts, technological artefacts, and social order (Callon, 1986; Latour, 1987; Law, 1986, 1992). Key figures such as Michel Callon, Bruno Latour, and John Law challenged prevailing sociological paradigms by insisting on the active role of non-human entities (technologies, animals, documents, natural phenomena) alongside humans in the formation and maintenance of socio-technical networks. While its roots are firmly in STS (Crawford, 2020), ANT's conceptual flexibility has facilitated its migration and fruitful application across a remarkably diverse range of disciplines. Notable expansions include sociology (Law, 1991, 1994), psychology (Michael, 1996), anthropology (Strathern, 1996), political science (Mol, 1999), human geography (Murdoch, 1998; Comber et al., 2003), and economic sociology (Callon, 1998), demonstrating its broad analytical purchase.

### 3.2.1 Beyond Determinism: ANT's Relational-Materialist Intervention

To fully appreciate ANT's theoretical intervention, it is essential to contextualise it within the prevailing scholarly discourse concerning the relationship between technology and society prior to its emergence. This discourse was largely dominated by two contrasting, yet equally problematic, perspectives, often characterized as a dichotomy (Latour, 1999).

The first perspective, frequently labelled the "materialist" or "technological determinist"

view, posits technology as an autonomous, external force that impacts society, driving social change in a largely linear and predictable manner (Markus and Robey, 1988). Within this framework, technology is conceived as fundamentally exogenous to the social realm. It arrives from "outside" society and imposes its logic, altering social structures, behaviours, and institutions. This view implicitly assumes the possibility of a purely "social" domain existing independently of technology and, conversely, a purely "technological" domain devoid of social shaping. Technology is endowed with inherent causal power – the "intrusive power" that Hill (1988, p. 6) later critiqued as "inherently wrong" to attribute to technology per se.

The opposing perspective, often termed the "social constructivist" or "sociological" view, inverts this causality (Latour, 1999). Proponents argue that society, through its economic structures, political negotiations, cultural values, and social interests, actively generates and shapes technology (Grint, 1998; Hill, 1988). Technology is seen not as an independent driver, but as an outcome, a crystallisation of complex social processes. As Hill (1988) argued, technology itself possesses no inherent power, and thus its effects and meanings are entirely contingent upon the specific social and cultural contexts into which it is embedded. Consequently, technology is rendered meaningless in isolation, and thus it functions merely as an intermediary or tool that embodies and executes human will and social imperatives. Its significance lies solely in its role as a carrier of social forces.

Despite their opposition, both perspectives share a critical, and for ANT proponents, flawed, ontological assumption: the separation of the social and the technical into distinct, pre-existing domains. Both views presuppose that these domains can be analytically and empirically disentangled, with one acting upon the other – either technology impacting society or society shaping technology (Callon, 1986; Latour, 1987). This dualism, ANT argues, misrepresents the nature of socio-technical reality.

ANT explicitly rejects this social/technical dualism. It refuses to grant a priori primacy to either the social or the technical, arguing instead that both are continuously co-produced within heterogeneous networks of relations (Law, 1991). ANT positions itself not as a synthesis, but as a radical alternative that bypasses the dichotomy altogether (Law, 1991). It contends that purely social relations or purely technical relations are empirically untenable. Every "social" relation involves material intermediaries (tools, texts, buildings,

bodies), and every "technical" artefact embodies and enacts social programs, alliances, and power relations (Latour, 1992; Law, 1991). The world, according to ANT, is populated by hybrid entities – complex amalgamations of human and non-human elements – that defy classification into these traditional categories.

This ontological stance marks a break with many established social theories, and in doing so, clarifies why ANT is a necessary theoretical framework for investigating the dynamic, socio-material practices of accountability evident in pandemic governance. This study's theoretical positioning is clarified by contrasting ANT with several influential sociological traditions that were considered as alternative analytical frameworks. These traditions —institutional theory, structuration theory, and critical realism—can be broadly categorised as given or structural perspectives (e.g., DiMaggio and Powell, 1983; Giddens, 1984; Bhaskar, 1975), insofar as they take pre-existing social structures, systems, or mechanisms as central explanatory units.

For instance, institutional theory excels at explaining organisational responses to macro-level pressures for legitimacy, isomorphism, and normative compliance (DiMaggio and Powell, 1983). Yet, its emphasis on symbolic and cognitive structures often brackets the role of material agency, treating technologies (such as health codes or data dashboards in this study) as passive instruments rather than active participants in shaping accountability relations (Orlikowski, 2007). This limitation becomes visible in a pandemic context, where digital and material actors continuously mediate, and often disrupt modes of governance and answerability.

Also, structuration theory productively bridges agency and structure, highlighting the recursive relationship between individuals and social systems (Giddens, 1984). However, it retains a human-centric focus, anchoring agency in human intentionality and knowledgeability (Giddens, 1984, p. 9). This makes it ill-equipped to account for the active role of non-human actors—such as malfunctioning algorithms, quarantine seals, or testing protocols—in enabling, constraining, or reconfiguring accountability networks (Latour, 2005), especially during crises characterised by rapid socio-technical adaptations.

Moreover, critical realism posits a stratified ontology (the real, the actual, and the empirical)

and seeks causal explanations in underlying social structures and mechanisms (Bhaskar, 1975). While it acknowledges an external reality independent of human perception, it tends to subordinate the granular, mediating functions of non-human actors to broader, pre-existing social powers (Fleetwood, 2005). In doing so, it risks overlooking the micro-dynamics of how actor-networks, which are composed of both humans and non-humans, emerge, stabilise, or dissolve in real time, such as in the contested implementation of pandemic monitoring systems.

ANT, by contrast,belongs to a different epistemological family: it is a process-oriented, constructionist approach that does not begin with given structures, mechanisms, or stable categories (Latour, 2005) . Instead, it traces how order, stability, and even the categories of "social" and "structure" are effects achieved through the contingent and continuous work of assembling heterogeneous networks (Latour, 2005; Law, 1992). Moreover, ANT insists on a flat ontology wherein agency is understood as a distributed effect of relations among heterogeneous actants (human and non-human alike) (Latour, 2005; Callon and Law, 1995). This core commitment allows ANT to trace how accountability is dynamically enacted through ever-shifting networks of actors, without privileging human intentionality or reifying social structures. It is this relational and material sensitivity that makes ANT uniquely suited to this study's research aim: to conceptualise and trace accountability not as a fixed structure or a symbolic order, but as a performative outcome of socio-material translations within evolving actor-networks (Law, 2009; Mol, 2002).

In the context of pandemic governance, this means examining how non-human actor, such as colour-coded health algorithms, Wechat groups, or even emotional intensities like fear and trust, actively co-constitute regimes of accountability (Latour, 2020; Michael, 2016). ANT provides the conceptual vocabulary to ask not only who is accountable, but how accountability is assembled, contested, and reassembled through the interplay of policies, technologies, bodies, and affects (Callon, 1986; Law and Singleton, 2005). It is this capacity to reveal the emergent, contingent, and hybrid nature of governance that renders ANT an indispensable theoretical scaffold for the present study.

### 3.2.2 Conceptual Toolkit from ANT

The following core concepts of ANT—actors/actants, actor-networks, translation, and OPPs—are introduced here as an essential analytical toolkit. This toolkit will be directly deployed in the empirical analysis that follows (Chapters 5 and 6) to dissect how accountability was assembled and performed within the pandemic governance network. Rather than offering a mere descriptive account, these concepts provide the vocabulary needed to trace the processes through which human and non-human entities were problematised, enrolled, and mobilised (or resisted) within the evolving socio-material arrangements of the community (Callon, 1986; Latour, 2005). Specifically, they will allow this study to ask: how did a QR code act as a gatekeeper? How was "collective containment" transformed into an obligatory passage point? And how did the network of containment stabilise and later fracture? It is through these conceptual lenses that the seemingly static outcomes of governance are revealed as dynamic and contested accomplishments.

*Actors/Actants*

Within ANT, an actor (or actant, a term borrowed from semiotics to emphasise inclusion beyond the human) is defined not by its essential qualities (such as human consciousness or intentionality), but solely by its capacity to make a difference, to modify a state of affairs within a network of relations (Callon and Law, 1995; Latour, 2005). Crucially, ANT insists on generalised symmetry: agency is not the exclusive property of humans. Any entity, whether a technology, an animal, a document, an algorithm, a natural force, an institution, or even a concept, can be granted actor status if it demonstrably acts, mediates action, or alters the course of events within a specific network (Latour, 1999; Mol, 2002). Agency is thus understood relationally and performatively, and it emerges through the interactions and associations within the actor-network, rather than residing intrinsically within an entity (Callon and Law, 1995; Law, 1992).

The classic illustration is Callon and Law's (1995) telephone. An inert object on a desk until it rings, at which point it actively compels responses (answering, ignoring, unplugging), shaping human behaviour and decision-making. Similarly, Latour (1992) famously discussed the Berlin key and the hotel key, demonstrating how physical artefacts enforce specific spatial and temporal routines. In contemporary settings, an algorithm governing social media feeds acts as a potent non-human actor, shaping information flows,

user attention, and even emotional responses (Bucher, 2018; Introna, 2016). An institutional policy document acts not merely as a record but as a prescriptive force, defining legitimate actions and responsibilities (Robson, 1992). Thus, an actor is recognised as a source of action, regardless of its ontological status as human or non-human, what matters is its effect within the actor-network's dynamics (Latour, 2005). This decentring of the human subject is a cornerstone of ANT's challenge to conventional sociological explanations.

*Networks*

ANT networks are fundamentally distinct from the notion of stable, pre-existing structures like social networks or technical infrastructures. Instead, they are conceived as dynamic, heterogeneous assemblages (Latour, 1987). Networks constantly perform, maintain, and potentially reconfigure and comprise human and non-human actors aligned towards achieving a common goal (Latour, 1987; Law, 1986, 1992). Notably, these networks are not simply containers for action, they are the action itself. Their existence, strength, and durability depend on the continuous enrollment of diverse actors and the successful translation of their disparate interests into a relatively stable configuration (Callon, 1986; Law, 1994).

Crucially, ANT networks are performative. They are brought into being and sustained through the ongoing interactions and negotiations of their constituent actors. For instance, Latour's (1987) detailed ethnographic studies of scientific laboratories, revealed how scientists build robust networks by enrolling and aligning laboratory equipment, established theories, funding bodies, research subjects (like microbes or scallops), published papers, and colleagues, which is a fragile achievement constantly requiring maintenance. Also, Law's (1986) analysis of Portuguese navigation demonstrated how successful maritime exploration depended on forging stable networks linking ships, navigational instruments, maps, wind patterns, royal patronage, sailors' skills, and colonial ambitions. The core insight is that achieving complex socio-technical goals requires the coordinated effort and stabilised associations of a multitude of heterogeneous elements; the network is this coordination and stabilisation in action (Latour, 2005; Mol, 2002). Its "structure" is an effect of ongoing translation, not its cause.

*Translation*

The process through which these heterogeneous assemblages are built, stabilised, and transformed is termed translation (Callon, 1986; Latour, 1987). Translation describes the complex work undertaken by a focal actor (or group of actors) to enroll other actors into the actor-network (Latour, 1987). This involves redefining their identities, interests, and goals to align with the actor-network's objectives. It is inherently a process of negotiation, persuasion, interessement (locking actors in), and sometimes coercion, where actors are convinced (or compelled) that their own objectives can be best achieved by accepting the role defined for them within the emerging actor-network (Callon, 1986; Latour, 1987).

Actors enter a network with their own diverse, often conflicting, interests (Callon, 1986). For the network to cohere and function effectively, these interests must be translated, displaced, and transformed, so they converge with the interests defined by the network builders (Callon, 1991; Law, 1991). This is not a one-time event but an ongoing, precarious achievement. The stability of the network hinges on the continuous success of this translation process (Williams-Jones and Graham, 2003). Actors who resist translation, whose interests cannot be adequately aligned, or who are drawn towards competing networks become points of weakness, potentially leading to network modification, conflict, or even dissolution (Callon, 1986; Latour, 2005). Callon's (1986) seminal study of the St. Brieuc Bay scallops vividly illustrates this. Scientists attempted to translate the interests of fishermen (sustainable catch), scallops (survival/reproduction), and scientific knowledge into a conservation network, facing resistance and partial failure (Callon, 1986). Translation, therefore, is the dynamic engine of network formation and maintenance, constantly negotiating the tension between convergence and divergence of interests across the heterogeneous collective (Law, 1992; Mol, 1999).

*The Obligatory Passage Point (OPP)*

The concept of the Obligatory Passage Point (OPP), introduced by Callon (1986) during the problematisation moment, is central to understanding power dynamics and network control within ANT. It represents a critical juncture, a gateway, or a necessary condition that other actors within the actor-network must accept and pass through to achieve their own objectives as defined within the focal actor’s problematisation (Callon, 1986).

During problematisation, the focal actor (often the "would-be obligatory passage point") frames a problem in such a way that their proposed solution, role, or specific resource becomes indispensable (Callon, 1986). They position themselves (or their artefact, institution, standard, etc.) as the unavoidable intermediary between the identified problems and their resolution. As the case mentioned above, Callon's (1986) study of scallop fishermen in St. Brieuc Bay describes how three researchers positioned their scientific model and methodology as the OPP for resolving the problem of declining scallop stocks. Both the fishermen and the scallops (as actors) had to pass through the researchers' program to achieve their respective goals (sustainable catches for fishermen, survival for scallops) (Callon, 1986). By establishing an OPP, the focal actor effectively imposes their definition of the situation, the relevant actors, and their relationships. They become the gatekeeper, the controller of access to the desired outcome (Law, 1986).

The OPP is fundamentally a mechanism of power. The actor controlling the OPP gains significant influence over the direction, composition, and stability of the actor-network. They gain the ability to define the terms of engagement, set priorities, allocate roles, and filter which actors or actions are included or excluded (Heeks and Stanforth, 2007). Compliance is achieved because other actors perceive that aligning with the OPP and accepting the roles defined by its controller is the only viable path to achieving their own interests (as those interests have been framed within the problematisation (Callon, 1986). Resistance to passing through the OPP, or challenges to its necessity, directly threaten the network's configuration and the focal actor's centrality (Law, 1986).

The successful establishment and acceptance of an OPP contribute significantly to network stabilisation. It creates a focal point around which heterogeneous elements can converge and coordinate. However, the OPP is not inherently stable. Its status is constantly tested through "trials of strength" (Callon, 1986; Latour, 1987). Challenges can arise from: actors proposing alternative problematisations and OPPs; enrolled actors questioning the necessity of the OPP or the roles assigned to them; failures of the solution associated with the OPP; external events disrupting the network; the discovery that spokespersons no longer faithfully represent their constituencies (Callon, 1986). When such challenges succeed, the existing OPP may be bypassed, replaced, or dissolved, leading to actor-network reconfiguration and new rounds of translation.

### 3.2.3 Callon's Four Moments of Translation as an Analytical Framework

Within ANT's conceptual toolkit, the notion of translation is central, as ANT is often termed the "sociology of translation" (Callon, 1986; Latour, 1987). Different scholars have developed complementary yet distinct approaches to conceptualising translation. While Latour (1987) emphasises the strategic actions—such as persuasion, intrigue, or the creation of detours—through which actors impose their version of reality, Callon (1986) offers a more structured model that breaks translation into four sequential moments: problematisation, interessement, enrolment, and mobilisation:

• problematisation: The focal actor(s) define a problem or a set of problems in their own terms and propose themselves (and their solution) as an indispensable part of the resolution. They identify relevant actors whose interests are implicated in this problem and sketch an initial actor-network configuration where passage through the focal actor's proposed solution becomes necessary for others to achieve their objectives. This is the stage where the focal actor establishes themselves as an Obligatory Passage Point (OPP) (Callon, 1986; Law, 1986). The OPP is the gateway through which other actors must pass to achieve their goals as defined within this problematisation (Callon, 1986).

• Interessement: This moment involves the actions taken by the focal actor(s) to lock the targeted actors into the roles proposed during problematisation and to weaken competing associations that might draw them away. It's a process of interesting and attaching actors to the network. Strategies include deploying devices (physical or rhetorical), creating alliances, or negotiating with representatives who "speak in the name of others" (Callon, 1986: 214). The goal is to isolate target actors from alternative actor-networks and solidify their attachment to the OPP and the proposed actor-network configuration (Sarker and Sidorova, 2006).

• Enrollment: Successful interessement leads to enrollment, the point where target actors explicitly or implicitly accept the roles defined for them. This often involves negotiation, "trials of strength," and the alignment of identities (Callon, 1986, p. 211). Enrollment is not always consensual, it can be achieved through various means, including "physical violence

(against the predators), seduction, transaction, and consent without discussion" (Callon, 1986, p. 214). The focal actor defines the roles actors will play according to the scheme established via the OPP (Law, 1986; Linde et al., 2003).

• Mobilisation: The final moment concerns ensuring that the enrolled actors, particularly those representing larger collectives (e.g., user groups, communities, institutions), remain faithful representatives and that the constituencies they represent continue to follow them. The focal actor acts as the spokesperson for the actor-network, mobilising the force of the enrolled allies to lend legitimacy and power to the network and its objectives (Latour, 1990; Law, 1986). This involves creating a larger network of absent entities (represented by their spokespersons) that support the solution. However, there is always a risk of betrayal, where represented actors reject their spokespersons, leading to network instability and potential re-translation (Callon, 1986; Tatnall and Burgess, 2002).

Following chapters operationalises Callon's four moments as an analytical framework. This model is particularly suited to this study for three reasons. First, its phased structure offers clear analytical guidance for dissecting how pandemic governance mechanisms were initially constructed and how they evolved over time. In Chapter 5, for example, the concept of problematisation will be used to examine how municipal authorities framed "collective containment" as the primary response to COVID-19, positioning digital health codes and centralised directives as indispensable OPPs. The moment of interessement will help unpack the material devices, that sought to lock residents and street-level staff into specific roles.

Second, Callon's moments accommodate both stability and failure. This is crucial for analysing the empirical trajectory of pandemic governance, which as shown in Chapter 6, was marked by breakdowns, resistance, and re-assemblage. When health code systems malfunctioned or policy changes outran local implementations, the failure of interessement and enrolment became visible, opening space for alternative networks of accountability, such as neighbourhood-led mutual aid initiatives or handwritten health logs.

Lastly, the framework aligns with this study's ontological commitment to relationality and processuality. It does not take actors, roles, or structures for granted but requires the

researcher to trace how they emerge, hold together, or fall apart through the interactions of human and non-human actors. By employing Callon's four moments, this study moves beyond a descriptive account of "what" happened during the pandemic to an explanatory analysis of "how" and "why" certain accountability arrangements held, transformed, or dissolved under crisis conditions.

## 3.3 ANT in Accounting and Governance Research

Actor-Network Theory (ANT) has reshaped accounting scholarship over several decades, moving beyond viewing accounting as a neutral, technical tool or a mere reflection of social structures. Instead, ANT offers a lens to analyse accounting and governance as dynamic, contested processes of socio-material ordering, where heterogeneous networks of human and non-human actors co-construct realities (Ezzamel, 1994; Lowe, 2001; Jones and Dugdale, 2002). Its core contribution lies in dissolving the artificial divide between the "social" and the "technical," revealing how accounting practices, governance systems, standards, and even concepts like "cost" or "performance" emerge, stabilise, transform, and sometimes dissolve through processes of translation within actor-networks. This section synthesizes key applications of ANT within accounting and governance research, examining its insights and establishing its relevance for analysing the empirical case of pandemic networks presented in subsequent chapters.

### 3.3.1 Accounting Inscriptions and Action at a Distance

A central contribution of ANT lies in its analysis of how accounting inscriptions—reports, standards, data models—function as "immutable mobiles" (Latour, 1987) that enable action at a distance by stabilising knowledge and facilitating control across time and space. For example, Quattrone and Hopper's (2005) comparative study of Enterprise Resource Planning (ERP) implementations across multinational corporations exemplifies ANT's power. They utilised Latour's concept of "action at a distance" to show how specific ERP configurations materially redefined organisational space and control. Accounting inscriptions within the ERP (standardised codes, real-time data feeds, automated controls) were pivotal actants. They enabled headquarters (centres) to exert control over geographically dispersed subsidiaries (peripheries) by creating new forms of "closeness"

(through instant visibility) and “distance” (through enforced standardisation and reduced local autonomy) (Quattrone and Hopper, 2005). Crucially, the study revealed the ERP not as a static tool, but as a dynamic actor-network itself. Local sites engaged in translation processes, adapting, resisting, and reinterpreting the global system (problematisation and interessement challenges), thereby reshaping the global strategies the ERP was meant to implement (enrolment and mobilisation dynamics). This highlighted the co-construction of control: the actor-network shaped the technology, and the technology reshaped the actor-network and its power relations (Dechow and Mouritsen, 2005).

Similarly, Robson’s (1991) ANT analysis of the controversial development of the UK accounting standard for deferred taxation remains instructive. He traced the painstaking construction of a network involving professional accounting bodies (like the Institute of Chartered Accountants in England and Wales), government departments (e.g., the Inland Revenue), corporations, and conceptual arguments (e.g., the “liability view” vs. the “deferral method”). Robson (1991) demonstrated that the standard emerged not from the logical application of abstract accounting principles in a vacuum, but through a dynamic, often contentious process of translation. This involved continuous negotiation, the enrolment of key actors (and the exclusion of others), and the strategic mobilisation of inscriptions: discussion documents, exposure drafts, committee votes, and finally, the published standard itself. These inscriptions acted as immutable mobiles, freezing complex debates into a seemingly stable, authoritative text (Latour, 1987). The study illuminated how accounting rules governing corporate accountability to stakeholders are fundamentally socio-technical achievements, stabilised through network building and the enrolment of non-human allies (Power, 1997).

These studies challenge the objectivity of accounting information by revealing how numbers, reports, and standards emerge from complex processes of network building and stabilisation, and provide crucial theoretical tools for analysing how formal accountability is materially achieved through the production, circulation, and interpretation of documents and data visualisations. The concept of action at a distance explains how centralised control is exercised through decentralised practices, offering a non-deterministic alternative to traditional supervision models (Robson,1991; Quattrone and Hopper, 2005). This theme provides analytical purchase for examining pandemic governance instruments that served as powerful inscriptions making the virus governable.

However, studies in this tradition often emphasised successful cases of actor-network stabilisation, paying insufficient attention to failures, resistances, and breakdowns in accounting's mediating role. There was also limited consideration of how inscriptions are emotionally experienced and politically contested by different actors in practice. The focus on successful translation processes sometimes came at the expense of examining the power dynamics and exclusionary effects of accounting inscriptions. This study extends this tradition by examining not only how these inscriptions stabilised accountability relations but also how they faltered, were contested, and even failed in certain contexts, creating openings for alternative accountability arrangements to emerge.

### 3.3.2 Accounting Innovations as Networks-in-the-making

ANT studies have effectively reframed accounting innovations as precarious networks requiring continuous translation rather than pre-formed solutions. Research in this vein illustrates how innovations depend on enrolling diverse human and non-human allies and maintaining their alignment through ongoing work. For instance, Jones and Dugdale (2002) took a novel approach by analysing Activity-Based Costing (ABC) not just as a management accounting technique, but as a burgeoning actor-network itself. They traced its "translation" across diverse organisational contexts. The study illustrated how ABC enrolled key supporters (management consultants, academics, senior managers) and stabilised through the enrolment of crucial non-human allies: standardised software packages, textbooks disseminating the methodology, and published "success stories" acting as powerful inscriptions legitimising the approach. Jones and Dugdale (2002) highlighted the inherent fragility of such accounting innovations. Maintaining the ABC network required continuous translation work – defending its relevance against competing cost systems (like traditional absorption costing), adapting it to local contexts, and managing resistance. Crucially, their work demonstrated that ABC's meaning, perceived effectiveness, and identity as a solution were contingent on its actor-network associations and the success of ongoing translation efforts. When translations failed (e.g., interessement of middle managers faltered, or enrolment proved too costly/divisive), the actor-network destabilised, and ABC could be abandoned or radically reinterpreted (Briers and Chua, 2001).

This body of work provides a radical alternative to diffusion models of innovation by

showing that accounting change is a political achievement rather than a logical progression. It highlights the constant maintenance work required to sustain accounting networks and offers explanations for why innovations succeed in some contexts while failing in others. The focus on network fragility represents a significant advance over more deterministic accounts of accounting change. While excellent at tracing micro-processes of actor-network formation, this stream of research can sometimes under-theorize the broader institutional fields that shape translation possibilities. The focus on localised actor-networks may overlook how professional dominance, market pressures, and regulatory frameworks precondition certain translations while constraining others. There remains a need to better integrate ANT's micro-level insights with macro-level institutional analyses.

This lens is critical for understanding the implementation and evolution of pandemic technologies like contact-tracing apps and digital health codes. This study uses this approach to trace how these innovations were assembled and stabilised initially, but also how they faltered when translations failed due to technical limitations, policy contradictions, or user resistance. The framework helps explain why some pandemic accounting innovations achieved widespread enrollment while others prompted grassroots resistance and alternative solutions.

### 3.3.3 The Mediating Role of Accounting in Public Sector Governance

ANT has been impactful in challenging top-down narratives of public sector reform by highlighting accounting's constitutive role in governance. Lowe's (2001) study of NHS reforms and Chua's (1995) research on healthcare costing demonstrate how accounting technologies translate abstract policies into organisational realities, redefining roles and relationships in the process.

Chua’s (1995) study of costing liver transplants demonstrated ANT’s applicability beyond single organisations and into complex inter-organisational governance fields like healthcare. She mapped the intricate actor-network involving multiple hospitals, government health agencies, private insurers, and medical professionals. ANT revealed that the “cost” of a liver transplant was not an objective, pre-existing fact waiting to be

discovered by accountants. Instead, it was actively constructed through the interactions, negotiations, and circulation of inscriptions within this heterogeneous actor-network (Chua, 1995). Bills, reimbursement claim forms, clinical protocols, and funding agreements were not passive records but active mediators. They defined what costs were counted (e.g., direct medical vs. overheads, pre- vs. post-transplant), how and by whom they were allocated, translating diverse interests (hospitals seeking funding, insurers controlling payouts, governments ensuring efficiency) into a specific, contested figure. This highlighted how accounting practices fundamentally mediate governance relationships and resource allocation across organisational boundaries in complex, multi-actor fields (Miller, 1991).

Also in the public sector, a later work by Lowe's (2001) investigation of a large UK regional hospital provides a clear application of Callon's (1986) "sociology of translation". He traced how national health policy reforms (e.g., the "Internal Market") were not simply top-down impositions. Instead, they were translated into local organisational practices through the active mediation of accounting technologies. Budgets, activity-based costing systems, and performance reports acted as crucial inscriptions. These inscriptions enrolled diverse actors (clinicians, administrators, government funding bodies) into the new governance network. Lowe (2001) argued that accounting functioned as a "technology of persuasion," mediating between the abstract mandates of macro-level policy and the concrete realities of micro-level clinical practice. Through this process, accounting inscriptions reshaped relationships, redefined roles (e.g., clinicians becoming "budget holders"), and reconfigured control within the hospital, demonstrating the performative role of accounting in enacting governance (Ahrens and Chapman, 2007). This complemented the earlier work of Preston et al. (1992), who, though not explicitly using ANT terminology, showed how hospital accounting systems acted as "boundary objects," facilitating coordination across diverse professional groups (doctors, nurses, administrators) precisely because they were enrolled into different translations by each group while maintaining a common core identity – a process resonant with ANT's interessement and enrolment moments.

These studies reveal the complex mediation work through which accounting technologies translate political objectives into operational realities. They show how accounting creates new hybrid actors (e.g., "clinician-managers") and reconfigures power relations in ways

that often diverge from policy intentions. It provides a corrective to simplistic implementation models by showing how governance is achieved through socio-material arrangements rather than through hierarchy alone. Nevertheless, the focus on single organisations or specific policies can risk obscuring the wider political economy and historical legacies that precondition certain translations. There is sometimes insufficient attention to how pre-existing power asymmetries and structural inequalities shape the translation process from the outset. The emphasis on local adaptation may minimize the enduring constraints imposed by broader political and economic structures.

This theme provides a direct template for analysing China's pandemic response, particularly how national policies were translated into community-level practices through accounting-like devices such as health codes and quarantine monitoring systems. Notably, this study extends this approach by examining how these translation processes created new accountability relations between residents, volunteers, and state-affiliated actors, and how these relations were constantly renegotiated in practice amid changing pandemic conditions.

### 3.3.4 Affect, Emotion, and the Agency of the Non-Human

The integration of affect and emotion into ANT-informed accounting research represents a recent development. Boedker and Chua (2013) pioneered this approach by conceptualising accounting as an "affective technology" that generates and modulates emotions to shape organisational behaviour.

In Boedker and Chua (2013)’s study of a large US corporation navigating strategic change during economic uncertainty, they demonstrated how senior executives deliberately deployed specific accounting devices (performance dashboards, stretch targets, strategic narrative presentations) to generate and manage affect, such as excitement, hope, anxiety, collective urgency. Crucially, Boedker and Chua (2013) argued that these affects were not mere by-products or epiphenomena. They were central actants within the translation process, actively shaping the dynamics of the emerging strategic network. Emotions circulated through the organisation, were amplified by interactions with accounting inscriptions and meetings, and became powerful forces influencing commitment, resistance,

and action. Anxiety, for example, could trigger intense scrutiny of dashboards, while collective urgency fostered improvisation and collaboration, albeit sometimes bypassing formal controls (Boedker and Chua, 2013). This work integrated ANT with theories of affect, emphasising the embodied and emotional dimensions of accounting and governance, showing how affect becomes a crucial resource and a force reshaping actor-networks.

Boedker and Chua (2013) provided crucial methodological guidance relevant to this study. They emphasised the challenge of making "silent" non-human actors analytically visible. Their approach focuses on investigating what non-human actors make other actors do and how they bend the actions of humans. This necessitates meticulously tracing the effects of inscriptions, devices, and physical arrangements on the behaviour, perceptions, and emotions of human actors. In the context of pandemic governance explored later, this translates to examining: How did specific technologies (e.g., mandatory health QR code systems, door sensors monitoring quarantine) materially constrain and enable actions (interessement and enrolment)? How did they shape residents' experiences of surveillance, care, risk, and community (affective impact)? How did specific policy documents or data visualisations (dashboards) frame the emotional landscape of accountability (fostering fear, trust, frustration, solidarity) and influence public perception and compliance (mobilisation)? This approach operationalises the principle of symmetry by focusing on the tangible mediating effects of non-humans (Orlikowski, 2007).

### 3.3.5 Summary

The preceding review underscores ANT's suitability as the theoretical framework for this research into the emergence, transformation, and reassembly of accountability networks during the COVID-19 pandemic. Several syntheses emerge from the literature. Firstly, across settings (multinationals, hospitals, standard-setting), ANT reveals governance not as pre-designed and imposed, but as continuously co-constructed through the interactions within heterogeneous actor-networks. Accounting technologies are active participants in this process, not passive tools (Quattrone and Hopper, 2005; Lowe, 2001). Moreover, stability in accounting and governance networks is always precarious, achieved through continuous translation work. Actor-networks can fracture when translations fail (resistance during interessement/enrolment, loss of spokesperson legitimacy during mobilisation), leading to the abandonment of systems (Jones and Dugdale, 2002), modification of

standards (Robson, 1991), or reconfiguration of cost constructs (Chua, 1995). Outcomes are contingent on actor-network configurations and successful translation.

Additionally, material inscriptions (reports, models, standards, data dashboards) are vital for freezing complex realities, enabling action at a distance, and building stable actor-networks (Latour, 1987, 1990). The establishment and control of OPPs are central mechanisms of power within actor-networks, defining access, setting terms, and distributing roles and responsibilities (Callon, 1986). Finally, accounting and governance devices actively shape and are shaped by emotions and affect, which are powerful forces within translation processes, influencing commitment, resistance, and actor-network dynamics (Boedker and Chua, 2013).

Applying ANT to pandemic governance allows this study to analyse how devices (testing protocols, reporting dashboards, lockdown regulations, health code apps) and policies performed accountability: how they generated and managed affect, and crucially, how affect itself became an active force reshaping the actor-network. ANT, particularly through lenses like Boedker and Chua's (2013) "affective technology," provides the conceptual tools to grasp these complex, materially embedded, and emotionally charged dynamics.

### 3.4 Accountability as a Performative Effect of Socio-Material Translations

Building upon the foundational concepts of Actor-Network Theory (ANT) and its established application within accounting and governance research, this section develops the core theoretical proposition of this thesis: accountability is not a pre-existing structure or a static set of rules, but rather a performative effect continuously generated through the dynamic processes of socio-material translation.

This perspective fundamentally challenges the conventional views of accountability prevalent in governance and accounting literature. Traditionally, accountability is often conceptualised as a linear, principal-agent relationship, institutionalised through formal mechanisms, and is designed to ensure answerability and enforce consequences (Bovens,

2007; Mulgan, 2000). While acknowledging the importance of such frameworks, an ANT lens reveals their limitations in capturing the emergent, contested, and materially mediated nature of accountability in practice, particularly during complex events like the pandemic.

### 3.4.1 Challenging Conventional Views: Beyond Structures and Linearity

Traditionally, accountability is often conceptualised through a principal-agent lens (Bovens, 2007; Mulgan, 2000). This view posits a linear relationship: a principal (e.g., citizens, parliament, shareholders) delegates authority to an agent (e.g., government official, manager) who is then obliged to answer for their actions and decisions, typically enforced through formal mechanisms (elections, audits, reports, sanctions). Accountability is framed as an institutionalised arrangement designed to ensure answerability, transparency, and control, often embedded within hierarchical organisational charts, legal frameworks, and policy documents (Aucoin and Heintzman, 2000). While acknowledging the descriptive power and normative appeal of such frameworks, an ANT lens reveals their significant limitations in capturing the lived reality and contingent emergence of accountability in practice.

Firstly, the principal-agent model tends to reify accountability. It treats accountability as a fixed, self-evident attribute or relationship, existing prior to and independently of the practices that constitute it (Roberts, 1991; Messner, 2009). Moreover, the conventional model privileges intentional human actors (principals and agents) and downplays or ignores the constitutive role of non-human actors (technologies, documents, standards, physical environments) in shaping what accountability is and how it functions (Orlikowski, 2007; Scott and Orlikowski, 2012).

Additionally, conventional view presents accountability as a relatively stable imposition (Sinclair, 1995), overlooking the continuous processes of negotiation, resistance, translation, and adaptation through which accountability relations are actually forged and maintained (or dissolved) (Ebrahim, 2003; O'Dwyer and Unerman, 2007). It struggles to account for situations where accountability is fragmented, contested, fluid, and emerges from multiple, potentially conflicting, networks, which is a common feature in complex governance challenges like pandemics. In such settings, accountability cannot be understood as a pre-existing institutional script or a stable principal-agent contract. ANT's performative lens allows the researchers to trace how accountability is assembled in real

time through the entanglement of policies, digital platforms, testing protocols, and even affective states like fear or trust. For instance, during the pandemic, the emergence of digital health codes did not merely "implement" accountability, it actively reconfigured who was answerable to whom, through what material means, and with what consequences. By following these socio-material translations, ANT reveals accountability not as a fixed framework but as an emergent effect of crisis negotiation, a perspective that is indispensable for understanding disaster governance includes pandemic response.

### 3.4 2 Positioning within Broader Performativity Debates

While this study draws primarily on ANT's conceptualisation of performativity, it is important to situate this approach within broader interdisciplinary debates around performativity in social and organisational studies. Acknowledging these diverse strands demonstrates an awareness of the wider theoretical landscape and clarifies the specific epistemological commitments of this study.

The concept of performativity, originating in linguistic philosophy (Austin, 1962), has been expanded beyond ANT, particularly by scholars in critical management and science and technology studies. Each tradition emphasises different aspects of how practices, discourses, and material arrangements 'bring into being' the realities they describe. For instance, critical performativity, advanced by scholars such as Mats Alvesson and André Spicer, shares ANT's interest in how realities are constituted through practice but foregrounds emancipatory possibilities and reflexive critique (Alvesson and Spicer, 2012; Spicer et al., 2009). This strand is explicitly normative, seeking not only to analyse how organisational realities are performed but also to intervene by proposing and performing alternatives that challenge dominant power structures. In contrast to ANT's descriptive stance, which seeks to trace associations without privileging a priori moral or political positions (Latour, 2005), critical performativity is rooted in a critical theory tradition that aims to uncover and dismantle relations of domination.

Similarly, the work of Barbara Czarniawska offers a narrative and discursive approach to organisational performativity. Drawing on Goffman and literary theory, Czarniawska (2008) examines how organising is accomplished through the continuous 'action net' of storytelling and genre reproduction. In this view, accountability is performed through the iterative telling and re-telling of organisational narratives that create coherent accounts of

action. While sharing ANT's processual view, this approach places greater emphasis on discourse, narrative, and sense-making as the primary mechanisms of performativity, differing from ANT's more radical insistence on the agency of non-human, non-discursive actors.

Another significant alternative is found in the work of theoretical physicist and feminist theorist Karen Barad. Her framework of agential realism (Barad, 2007) shares ANT's deep commitment to materiality and its rejection of human exceptionalism. However, it diverges in its ontological foundations. Barad critiques representationalism, which is the idea that language mirrors pre-existing reality, arguing instead that phenomenona are constituted through specific "intra-actions" within apparatuses (Barad, 2007). For Barad, performativity is not about how actors (human or non-human) leverage discourses, but about how discourse and matter are mutually constituted through iterative intra-actions. Her concept of 'phenomena' as the primary ontological unit, which denies the separateness of observer and observed, contrasts with ANT's more pragmatic ontology of networks and actors that can be traced empirically (Gad et al., 2015).

Compared to the above, this thesis aligns most closely with the ANT tradition of performativity for several reasons. First, its focus on socio-material translation provides a pragmatic methodological toolkit: concepts, such as OPPs, inscription, and the four moments of translation, is well-suited to empirical tracing of how accountability is assembled and contested in a complex crisis setting. ANT's radical symmetry offers a disciplined way to attend to the constitutive role of the diverse non-human actors (e.g., health codes, sensors, dashboards) that were central to pandemic governance. Second, this study's aim is primarily descriptive and analytical, rather than normative or emancipatory. It seeks to understand how pandemic accountability was done—the mechanisms, actors, and processes involved—rather than to prescribe a better form of accountability. ANT's methodological agnosticism is therefore a better fit than the normative commitments of critical performativity.

Nevertheless, this research remains attentive to the insights from these alternative strands. From critical performativity, it adopts a sensitivity to the power effects and exclusionary outcomes of the performed accountability networks it traces. From narrative approaches, it acknowledges the importance of the stories and accounts that actors use to make sense of

their actions. From Barad, it takes a serious commitment to the inseparability of the material and the discursive, even as it employs the more actor-oriented vocabulary of ANT to make this process researchable.

### 3.4.3 Accountability as Actor-Network Effect: Performativity in Action

ANT instigates a epistemological shift in conceptualising accountability. Rather than treating it as a static institutional arrangement or a linear principal-agent contract, here this study reconceptualises accountability as a dynamic actor-network effect—continuously enacted, contested, and reconfigured through socio-material relations within evolving actor-networks. This perspective is anchored in ANT's foundational relational ontology (Latour, 2005; Law, 1992), which dissolves the artificial dichotomy between "social" and "technical" domains. In this view, accountability emerges not from top-down imposition but from the horizontal negotiations and alignments of heterogeneous actors.

As mentioned above, traditional accountability frameworks, dominated by principal-agent theory, presuppose a stable hierarchy where agents (e.g., government officials) answer to principals (e.g., citizens) via formal mechanisms (audits, elections) (Bovens, 2007; Mulgan, 2000). ANT rejects this reification, arguing that accountability is relationally constituted through the interplay of actors within actor-networks. As Law (1992, p. 383) asserts: "Agency is not an inherent property of humans but an effect generated through networked relations. What we call 'accountability' is a precarious achievement of these relations." This decenters human intentionality, acknowledging that non-human actors actively mediate and co-constitute accountability. For example, during the COVID-19 pandemic, digital contact-tracing apps (non-human actors) did not passively report data; they actively enforced new behavioural norms (Sharon, 2021). By triggering quarantine alerts based on GPS proximity, these apps reconfigured relations between citizens and health authorities, making "compliance" a material-semiotic achievement (Sharon, 2021). ANT thus reveals how accountability is distributed across hybrid networks.

Moreover, ANT's performative lens, drawing on Judith Butler's (1990) theory of iterative practices and Donald MacKenzie's (2006) work on financial models, posits that accountability is brought into being through repetitive socio-material performances. When

actors engage in practices labelled "accountable" (e.g., filing health status reports, scanning vaccine QR codes), they are not merely describing reality but enacting it. As MacKenzie (2006, p. 19) argues: "Economic models do not describe a pre-existing economy; they perform it into existence." Similarly, pandemic data dashboards perform accountability. Real-time visualisations of intensive care units (ICU) occupancy rates (non-human inscriptions) shape governmental crisis narratives, public trust, and policy justifications (Scott and Orlikowski, 2012). When these dashboards display contradictory data: when UK Public Health England's COVID-19 death counts included pre-pandemic fatalities (BBC, 2020), they destabilise accountability relations, exposing its contingency. This illustrates performativity's double edge: the same practices that stabilise accountability can also unravel it.

More recent case studies from pandemic contexts empirically validate ANT's framework. For example, in Italian COVID-19 wards, triage algorithms (non-human actors) allocated scarce ICU beds based on survival probability scores (Zeneli et al., 2021). These algorithms performed distributed moral accountability: they absorbed ethical decisions about life prioritisation, shielding clinicians from blame. When families contested allocations, the algorithm's opacity became an accountability failure, revealing how non-human "solutions" can obscure responsibility (Pasquale, 2015). Moreover, the UK's £37 billion Test-and-Trace system collapsed partly due to failed translation. Excel spreadsheet errors (non-human actants) caused 16,000 unreported COVID cases in 2020 (Guardian, 2020). This technical failure ruptured interessement: citizens lost trust, local health teams bypassed the system, and the actor-network fragmented. Accountability dissolved because the socio-material alliance (data systems and humans) failed. Even pre-pandemic, Power (1997) showed how auditing transforms accountability into a actor-network effect. Audit reports (inscriptions) enroll clients, regulators, and standards into a "chain of assurance." When algorithmic audits replace humans—as in blockchain "smart contracts"—accountability shifts from interpersonal trust to code-based verification (Scott and Orlikowski, 2014).

Among these cases, ANT's performative reframing reveals accountability as: emergent (continuously made/unmade through actor-network interactions); hybrid (constituted by human-non-human alliances); and precarious (dependent on successful translation and inscription). Accountability, therefore in ANT terms, is neither a structure nor a contract. It

is a socio-material achievement, performed into existence through networked relations. This perspective equips this study to trace accountability dynamically: not as a fixed outcome but as a process of continual becoming, where humans and non-humans collectively negotiate answerability.

### 3.4.4 The Engine of Performativity: Translation Processes Revisited

The core processes of ANT (Callon, 1986), are not merely analytical tools, they are the engines driving the performance of accountability. These processes demonstrate how accountability effects are generated, stabilised, and potentially disrupted within socio-material networks. Crucially, these are not purely discursive or social processes, but they are fundamentally entangled with materiality at every step (Orlikowski and Scott, 2008).

*Problematisation: Framing the Accountable Moment*

This moment is where a situation is defined as requiring accountability. It involves framing a "problem" in specific terms (Bovens et al., 2014). Defining an "accountability gap," a "governance failure," or a "crisis of trust" is itself a powerful performative act. It establishes the relevant actors (e.g., Who is accountable? To whom? For what? Who has the right to demand answers?), and the nature of the problem, and implicitly positions certain entities as potential Obligatory Passage Points (OPPs) for achieving resolution or restoring order (Mulgan, 2000; Pollitt and Hupe, 2011). This framing is materially shaped and constrained. Available data, the capabilities of measurement technologies, the affordances of communication channels, and prevailing scientific or political narratives actively co-define what can be problematised and how (Power, 1997; Kornberger and Carter, 2010).

*Interessement: Locking Actors into Accountable Roles*

Interessement involves actions taken by focal actors (often those seeking to establish or enforce accountability) to lock other actors into the roles proposed during problematisation and to weaken competing associations that might draw them away (Callon, 1986; Latour, 2005). This is where the specifics of accountability relations are actively forged and attempts are made to solidify them. It's about attaching actors (human and non-human) to

the nascent accountability network defined in the problematisation (Roberts, 1991; Ahrens and Chapman, 2007).

*Enrolment: Accepting (or Resisting) the Accountable Position*

Successful interessement leads to enrolment, where target actors explicitly or implicitly accept the roles defined for them within the accountability network (Callon, 1986; Law, 1992). This often involves negotiation, "trials of strength," and the alignment (or imposition) of identities. Enrolment is the point where the accountability relation becomes operationalised — actors start performing their assigned roles. However, enrolment is not always consensual or complete. Resistance, reinterpretation, and partial compliance are common (O'Dwyer and Unerman, 2007; Ebrahim, 2003).

*Mobilisation: Maintaining the Network and Legitimising Accounts*

This final moment concerns ensuring that the enrolled actors continue to support the actor-network and accept the accounts given (Callon, 1986; Latour, 1987). Mobilisation is crucial for the stability and legitimacy of the accountability effect. The focal actor acts as a spokesperson for the actor-network, mobilising its enrolled allies and the force they represent (Bovens, 2007; Messner, 2009) to lend credibility and power to the accountability claims being made. However, mobilisation is precarious (Koppell, 2005). Spokespersons may lose credibility (e.g., if data is shown to be manipulated); represented groups may reject their spokespersons (Sinclair, 1995; Romzek et al., 2012). Such betrayals lead to actor-network instability, demands for re-translation, and the potential emergence of counter-networks offering alternative accountabilities.

In conclusion, adopting this performative, socio-material view of accountability provides the essential theoretical foundation for this thesis. It moves beyond seeing accountability as a static framework or a simple principal-agent contract (Mulgan, 2000). Instead, it equips this study to analyse accountability as an ongoing, emergent accomplishment. The processes of translation (problematisation, interessement, enrolment, mobilisation) offer a robust analytical toolkit. This lens allows this study to trace empirically how pandemic accountability was enacted in specific contexts: how problems were framed (problematisation), how actors and devices were enlisted to perform specific roles (interessement and enrolment), how legitimacy was built and maintained (mobilisation),

and where and why these processes encountered breakdowns, resistance, and reconfigurations. It highlights the active role of non-human actors not as passive tools, but as constitutive participants in the performance of accountability. Crucially, this processual view of accountability-as-effect lays the necessary groundwork for understanding how responsibility is constituted. From the specific configurations and translations is accountability enacted, and a particular distribution of responsibilities emerges.

## 3.5 Responsibility as Distributed, Contingent, and Relational

If accountability is the continually negotiated effect of the actor-network, then responsibility can be understood as its dynamically allocated content. Building on the premise that accountability is performatively produced through socio-material translations, this section argues that responsibility is not a precursor to accountability but is rather derived from it. In other words, what counts as a "responsible" action or who is enrolled as a "responsible" actor is not a pre-defined moral given. Instead, it is a distributed, contingent, and relational property that emerges from the same actor-network configurations that perform accountability.

This section develops the theoretical proposition: responsibility itself could be understood as distributed across human and non-human actors, contingent upon the stability and configuration of the actor-network, and relational, emerging from the positions and connections actors hold within actor-networks. This perspective represents a departure from conventional models of responsibility prevalent in governance and accounting literature (Bovens, 1998; Young, 2011), offering a framework far more attuned to the complex realities of governance, particularly during crises like the COVID-19 pandemic.

### 3.5.1 Responsibility as Distributed: Dissolving the Human/Non-Human Divide

Traditional conceptions of responsibility, particularly in western philosophical and legal tradition, are heavily anchored in notions of individual human agency, intentionality, and control (French, 1984; Hart, 1968). This model posits a rational, autonomous human actor who possesses sufficient knowledge and foresight; exercises free will and intentional

choice; has adequate control over the actions and outcomes for which they are held responsible; and could be legitimately subjected to praise, blame, sanctions, or rewards based on their actions and intentions (Strawson, 1962; Velasquez, 1983).

This model underpins governance mechanisms like hierarchical command structures, individual performance evaluations, legal liability frameworks, and ethical codes focused on individual conduct (Bovens, 1998; Dubnick, 2003). Responsibility is treated as an attribute possessed by discrete individuals who can be pinpointed as the ultimate "cause" of events (Goodin, 1986). Consequently, failures of responsibility are often framed as failures of individual morality, competence, or oversight (Vaughan, 1999).

An ANT lens, however, reveals the limitations of this individualist paradigm, especially when confronted with complex socio-technical characteristic of governance and accounting. Firstly, the traditional model ignores the active role of non-human actors. Technologies, documents, standards, and physical infrastructures are not neutral tools but active participants that enable, constrain, and define what actions are possible and how responsibility is enacted (Law, 1992). For instance, a budget spreadsheet doesn't merely report numbers, it actively shapes managerial priorities and frames what constitutes "responsible" financial behaviour (Qu and Cooper, 2011). Ignoring this constitutive role leads to a distorted understanding of responsibility.

Moreover, the complicated actor-networks inherently diffuse control. Outcomes emerge from the interplay of numerous elements, often in unpredictable ways (Latour, 2005). In this vein, there is no single actor, however powerful, possesses complete control over the actor-network. For example, a CEO issuing a safety directive relies on layers of management, reporting systems, training materials, safety equipment, and worker compliance. All of which can mediate, translate, or subvert the original intention (Malsch, 2013). Attributing responsibility solely to the CEO ignores the distributed nature of agency and control within the actor-network.

ANT challenges the idea of the autonomous, bounded individual. In the story of ANT, human actors are always embedded within and constituted by networks of relations involving other humans and non-humans (Latour, 2005; Law, 1992). In dense

actor-networks, tracing clear, linear causal chains from individual intention to specific outcome becomes empirically untenable (Latour, 1999b). Effects are emergent properties of the actor-network's interactions. Attempts to isolate a single "responsible" actor often involve cut-offs in the chain of associations, or ignore the constitutive role of non-human mediators (Callon and Law, 1995).

### 3.5.2 Responsibility as Contingent: The Fragility of Network Effects

As mentioned above, responsibility is an effect of actor-network configurations. Its existence, form, scope, and attribution are not fixed, but depend on the ongoing processes of translation that build, stabilise, maintain, or disrupt the network (Callon, 1986; Law, 1992). Consequently, responsibility is inherently contingent.

Responsibility relations are only as stable as the actor-network that enacts them. The moments of translation are sites of constant negotiation and potential failure. For example, if interessement fails, actors are not successfully locked into their roles or are drawn away by competing actor-networks, the responsibility assigned to them becomes moot. If enrolment is resisted or only partial, the intended responsibility relations are modified or subverted. If mobilisation falters, spokespersons lose credibility or represented groups rebel, the entire responsibility and accountability framework can collapse, leading to demands for re-translation (Callon, 1986; Latour, 1987). Responsibility, therefore, fluctuates with the actor-network's "state of becoming" (Chia, 1999). As Callon (1986, p. 24) observed, "Translation continues but the equilibrium has been modified... reality begins to fluctuate."

Similarly, the changes in the material composition of the actor-network directly reconfigure responsibility. For example, in Mol’s (2002) ethnography of atherosclerosis diagnosis in a Dutch hospital, clinicians used different tools to enact distinct versions of "atherosclerosis." Each tool redistributed responsibilities. Ankle pressure measurements prioritising patient interaction and symptom tracking, enrolled nurses as primary diagnosticians, while angiograms shifted responsibility to radiologists and imaging technicians, framing atherosclerosis as a "vessel-narrowing" phenomenon requiring surgical intervention (Mol, 2002, pp. 84–89). The "same" disease entailed divergent

responsibilities contingent on which material assemblage was activated.

Moreover, ANT scholars demonstrate that realities are not singular but multiple (Law, 2004). Different actor-networks enact different, partially overlapping versions of the "same" phenomenon. For example, Berg's (1997) study of HIV clinics shows how viral load tests enacted HIV as a "quantifiable pathogen." Responsibility focused on individual compliance (treatment adherence, safe sex). Clinicians became "data managers," while patients bore responsibility for biomarker control (Berg, 1997). Conversely, Rabeharisoa and Callon's (2002) work on French patient associations reveals how AIDS activists reframed HIV as a "social crisis." Responsibility shifted to governments (funding harm reduction) and pharmaceutical firms (drug pricing). NGOs, not clinicians, became key responsibility-bearers for community care (Rabeharisoa and Callon, 2002). Consequently, responsibility is not a single, universal attribute but contingent upon which enacted reality is foregrounded.

### 3.5.3 Responsibility as Relational: Positionality within the Network

Finally, responsibility is fundamentally relational. An actor's responsibility is not defined by its inherent nature but by the position it occupies and the connections it holds within a specific actor-network at a specific time (Latour, 2005; Law, 1999).

Within a actor-network stabilised through translation, actors are assigned specific roles that define their responsibilities relative to others and to the actor-network's objectives (Callon, 1986; Law, 1991). For instance, Preston et al.'s (1992) ethnography of a UK hospital's clinical budgeting system illustrates how responsibilities are relationally produced. When administrators introduced new budgeting mechanisms (akin to diagnostic-related groups) as OPPs for resource allocation, medical consultants were pressured to become "financially responsible" actors. They were no longer accountable solely to patients but were repositioned within a web of financial calculations managed by administrators. Similarly, nursing and coding practices were reconfigured to feed these accounting systems. As such, the budgeting technology acted as a non-human arbitrator, attempting to legitimise or reject care decisions based on fiscal visibility (Preston et al., 1992; Robson, 1992). This echoes Law's broader theoretical argument that responsibility does not reside in individuals but in

the heterogeneous relations between human actors and technical devices; as he argues, agents are "an effect generated in a network of heterogeneous materials" (Law, 1994, p. 24).

Notably, the actor controlling the OPP holds a particularly powerful position in defining and distributing responsibilities (Callon, 1986). By making passage through themselves (or their system/standard/rule) necessary for others to achieve their goals, the OPP controller gains the power to set the terms of engagement, define what counts as responsible action, and filter which actors or actions are included or excluded. The OPP becomes the focal point around which responsibilities are organised and legitimised (Heeks and Stanforth, 2007). For instance, when the European Medicines Agency (EMA) became the OPP for drug approval, pharmaceutical firms became responsible for submitting standardised trial data, enrolling statisticians and lab equipment to generate compliant evidence; doctors were repositioned as "protocol implementers," responsible for prescribing only European Medicines Agency (EMA) approved drug-disease pairings. The EMA's database itself became responsible for filtering "valid" evidence, overriding clinical judgment.

Viewing responsibility as distributed, contingent, and relational, through an ANT lens, provides a theoretical foundation for analysing governance phenomena like pandemic response. Firstly, it allows this study to trace how responsibility and therefore, accountability, was dispersed across a heterogeneous assemblage. Responsibility was enacted by the actor-network, not by a single actor. Also, It highlights the fragility and constant negotiation of responsibility. Protocols changed as virus evolved (problematisation shifts); compliance wavered under fatigue or conflicting advice (interessement/enrolment challenges); trust fluctuated with data accuracy and communication consistency (mobilisation precarity). Responsibility arrangements were constantly being made, unmade, and remade. Finally, it focuses analysis on how specific actors' responsibilities were defined by their position within the evolving pandemic actor-network. Policies, testing, residents, and staffs, their relationships are constantly being restructured amid the evolution of the network, leading to different attributions of responsibility.

## 3.6 ANT as the Research Approach

Actor-Network Theory (ANT) is a sociology of associations, tracing how entities come together, hold together, or fall apart (Latour, 2005). As mentioned above, its core strength lies not merely in describing static actor-networks, but in providing a dynamic methodological lens for following the socio-material orders emerge, fracture, and reassemble. This capacity makes ANT uniquely suited for analysing accountability in COVID-19 and disaster management, where governance is characterised by fluid assemblages, contested authorities, and the constant negotiation of what counts as "responsible" action (Ansell et al., 2020). Unlike institutional or principal-agent approaches, which tend to assume stable roles and clear hierarchies, ANT allows researchers to trace how accountability is improvised in response to crisis contingencies. By refusing to privilege human intentionality or pre-defined structures, ANT reveals how accountability emerges from the interactions between policies, technologies, emotions, and bodies in real time. This is especially crucial for disaster studies, where the failure to recognise the agency of non-human actors (e.g., collapsing infrastructure, spreading pathogens, or algorithmic biases) can lead to simplistic attributions of blame and misguided policy responses. This section elaborates how ANT's core methodological principles (agnosticism, symmetry, free association), combined with its conceptual toolkit (translation, OPPs, inscriptions), enable this vital tracing of dynamics, providing the essential theoretical scaffolding for this study.

### 3.6.1 Agnosticism: Suspending Judgement to Map Controversies

Conventional social science often begins with predefined categories (e.g., "the State," "community," "expertise," "public opinion") and established explanations (e.g., power imbalances, cultural norms, institutional logics) (Foucault, 1972; Bourdieu, 1977). However, ANT adopts a radical methodological agnosticism (Callon, 1986; Latour, 1987). This means the researcher deliberately suspends a priori assumptions about the nature, motivations, relative importance, or inherent qualities of the actors involved in a situation. The goal is not to explain events away using existing sociological categories (Law, 1999; Mol, 2002), but to describe how actors themselves define the situation, establish their identities, interests, alliances, and what counts as relevant knowledge or legitimate authority in the course of their interactions (Latour, 2005).

This agnostic stance is crucial for following controversies impartially. Controversies erupt precisely when there is uncertainty or disagreement about the identities of the relevant actors, the definition of the problem, or the legitimate solutions (Venturini, 2010). ANT treats controversies not as noise obscuring an underlying social reality, but as the very sites where the social and material fabric is being actively woven and rewoven (Latour, 2005). By refusing to grant explanatory privilege to any predefined social force (e.g., "capitalism," "bureaucracy," "risk society") or actor category at the outset, ANT forces the researcher to follow the actors as they engage in disputes, build alliances, mobilise evidence, and attempt to impose their definitions of reality.

In the context of pandemic governance, agnosticism allows this study to trace controversies without assuming. For instance, that "government" is a monolithic entity, that "science" speaks with one voice, or that "the public" is a homogenous group with fixed interests. Instead, under the principle of agnosticim, this study follows how specific actors (e.g., residents committee, residents, volunteers, testing) become defined and define others within the unfolding controversy. ANT demands tracing the specific processes through which actors attempt to stabilise their versions of the problem and solution, enrolling allies (human and non-human), creating OPPs, and generating inscriptions that withstand challenges (Callon, 1986; Latour, 1987). The controversy itself becomes the map of the emerging actor-network and its points of tension.

### 3.6.2 Symmetry: Granting Agency to Humans and Non-Humans Alike

Closely linked to agnosticism is ANT's principle of generalised symmetry (Callon, 1986; Latour, 1993). This principle mandates that the analyst should explain the successful and unsuccessful outcomes of actor-network building using the same conceptual framework for both human and non-human actors. Crucially, it means granting non-humans the status of active mediators rather than passive intermediaries. Non-humans are not merely neutral tools transmitting human will or social forces unchanged, they transform the actions, meanings, and relations they mediate (Latour, 2005).

Symmetry is essential for understanding both disruptions and stabilisations, without falling into either technological determinism or social constructivism (as critiqued in section 3.2.1). It allows ANT to trace how non-humans actively participate in controversies, cause

disruptions, or contribute to stability. For expample, the affordances and limitations of a video conferencing platform shape how accountability hearings are conducted, mediating who can speak, how evidence is presented, and the perception of transparency or evasion (Scott and Orlikowski, 2012; Orlikowski, 2007). ANT traces how this specific technology actively participates in the controversy over accountability. Disruptions often occur when non-human actors "misbehave" or reveal unexpected capacities that destabilise the existing translation (Latour, 2000).

Conversely, stabilisation often relies heavily on non-human actors. Reporting templates, digital dashboards aggregating data from multiple sources, or physical barriers enforcing quarantine rules act as crucial inscriptions and immutable mobiles (Latour, 1987; 1990). They freeze complex realities into comparable, combinable, and transportable forms. By circulating, these inscriptions help align diverse actors across space and time, reinforcing the problematisation, solidifying interessement, and enabling mobilisation by providing seemingly objective accounts (Robson, 1992; Quattrone and Hopper, 2005; Justesen and Mouritsen, 2011). Symmetry forces this study to show how these non-humans contribute to holding the actor-network together, not just that they are present. In practice, this means the interview protocols and observation guides must actively prompt this study to identify and investigate the role of non-human actors. The study avoid only collecting data on human perceptions and decisions, instead specifically documenting the participation of technologies, documents, algorithms, and physical objects.

### 3.6.3 Free Association: Following the Actors Without Predefined Boundaries

ANT advocates methodological free association (Latour, 2005). This principle dictates that the researcher must follow the actors wherever they lead, without imposing predefined boundaries on the actor-network. These boundaries could be organisational (e.g., focusing only on a single government agency), geographical (e.g., limiting the study to a specific city), sectoral (e.g., only the health sector), or conceptual (e.g., only "formal" accountability mechanisms) (Law, 2004; Mol, 2002). The actor-network is defined empirically by the connections traced through the actors' own associations and translations. Where does a controversy lead? Which unexpected actors are enrolled or become relevant? What surprising connections emerge between domains previously considered separate? (Callon, 1986). This methodological openness is vital for capturing the fluid, distributed, emergent, and often surprising nature of socio-technical phenomena, especially during

crises where conventional boundaries dissolve rapidly.

Free association is linked to the theoretical position of responsibility as distributed and relational (Section 3.5). By following associations widely, ANT reveals how responsibility for actions and outcomes is dispersed across a vast, heterogeneous assemblage of human and non-human actors, held together only through the fragile achievement of actor-network stabilisation. It prevents the premature closure of the field of inquiry, allowing this study to trace how responsibility flows and shifts across the network.

Moreover, free association allows this study to trace how the network itself evolves: how new actors are enrolled, existing roles are redefined, OPPs shift, and inscriptions change. It captures the moments of breakdown and re-translation, as actors struggle to adapt the actor-network to changing circumstances (Callon, 1986). This is essential for understanding the dynamic performativity of accountability, how its meaning and practice are constantly remade.

This principle means the primary goal for this research is to map the relationships that define the actors, rather than taking the actors themselves for granted. This translates into a data collection strategy focused on controversies and processes of negotiation. For instance, there was no simply interview participants about their views on “accountability” or "network." Instead, asking them to reconstruct specific events or decisions, tracing the flow of information, the points of resistance, and the alliances formed. This allows this study to see how accountability was assembled in that moment, preventing a static and institutional analysis.

### 3.6.4 Translation, OPPs, Inscriptions as Dynamic Trackers

The methodological principles mentioned above are operationalised through ANT’s core conceptual tools. Firstly, translation (Problematisation, Interessement, Enrolment, Mobilisation) is the core process engine (Callon, 1986). ANT doesn't just identify actors and actor-networks, it traces the process by which actor-networks form, stabilise, or dissolve. Following controversies means mapping competing problematisations (e.g., "health crisis" vs. "survival crisis"). Tracing disruptions involves identifying where interessement fails (actors aren't locked in), enrolment is resisted, or mobilisation collapses

(spokespersons lose credibility). Documenting stabilisations involves showing how these four moments are successfully achieved and maintained, often through the enrolment of non-human allies (Law, 1986; Latour, 1988). The cyclical nature of translation (including re-translation) provides the framework for understanding dynamics.

Moreover, OPP is a dynamic achievement, not a static feature (Callon, 1986). ANT traces how OPPs are established, contested, defended, bypassed, or replaced during controversies. The rise and fall of an OPP is a key marker of actor-network stabilisation or disruption. How do actors build alliances to make their OPP indispensable? What challenges emerge? How do alternative OPPs arise? (Heeks and Stanforth, 2007; Tatnall and Burgess, 2002). Similarly, inscriptions are the material traces that freeze action and enable action at a distance (Latour, 1987, 1990). ANT traces how inscriptions (dashboards, reports, policy documents) are produced, circulated, challenged, and used within the actor-network. Their stability and mobility are crucial for actor-network stabilisation. Their fragility, ambiguity, or contestation are potent sources of disruption and controversy (Robson, 1992; Quattrone and Hopper, 2005; Justesen and Mouritsen, 2011). Following inscriptions reveals how realities (including accountability) are constructed and made durable.

Conventional governance and accountability theories, often focused on static structures, institutional designs, or principal-agent dyads (Bovens, 2007; Mulgan, 2000). ANT, by contrast, allows empirically trace the emergence of accountability arrangements from the ground up, without presupposing their form; map controversies impartially, revealing the actors, alliances, OPPs, and inscriptions involved in defining accountability problems and solutions; analyse disruptions symmetrically, showing how human and non-human actors contribute to the breakdown of existing translations and accountability performances.

This methodological apparatus (agnosticism, symmetry, free association, applied through the dynamic concepts of translation, OPPs, and inscriptions) positions ANT as the optimal theoretical lens for studying pandemic accountability. The pandemic was not a scenario of stable, pre-defined accountability structures functioning smoothly, but was characterised by uncertainty and emergence. Following empirical chapters will use this lens to trace these processes.

## 3.7 Conclusion

This section clarifies the theoretical positioning of this research, articulating how it builds upon and extends the existing tradition of ANT-inspired scholarship, particularly in accounting and accountability studies, and finally demonstrates the framework that will guide the subsequent empirical analysis.

Existing ANT-inspired research in accounting and organisation studies has yielded significant insights, yet its focus has largely been on the implementation of technological systems (e.g., ERP systems), the dynamics of innovation adoption, and the institutionalisation of international accounting and auditing standards (e.g., Quattrone and Hopper, 2005; Briers and Chua, 2001). These studies have demonstrated how accounting technologies act as 'silent intermediaries' or 'obligatory passage points' in the construction and stabilisation of actor-networks.

This study, however, makes an extension to this literature by pushing ANT into the domain of pandemic governance and accountability under crisis conditions. In a crisis, the urgency of decisions, extreme resource scarcity, and even life-or-death consequences mean that practices of accountability are not routine, institutionalised operations but become visible, negotiated, and precarious performative effects. The core theoretical move of this study is to: reconceptualise accountability as a performative effect of socio-material translations (emergent, hybrid, precarious) within pandemic actor-networks, and from this, to understand 'responsibility' as a distributed, contingent, and relational property derived from these accountability effects.

This theoretical framework provides a unique lens for the empirical analysis, enabling this study to ask the questions that other frameworks would neglect. For example, in a specific pandemic response situation, which human and non-human actors are recruited and aligned to perform 'accountability'? How is the practice of accountability assembled through processes of translation (problematisation, interessement, enrolment, mobilisation)? Which actors attempt (successfully or not) to become 'obligatory passage points' for others? How does accountability, as a performative effect, emerge from the interactions within the actor-network? How is it materialised? And how is it rendered precarious and unstable by

the dynamics of the actor-network?

Through this framework, this study will not seek a pre-defined, normative model of accountability but will instead empirically trace how accountability is assembled, performed, and contested in practice, that is, following the actors. This offers a dynamic and material analytical lens for understanding governance in crisis. The following methodology chapter will detail how this framework is operationalised through case study research and the practice of 'tracing' to gather and analyse the empirical evidence.

# Chapter 4: Methodology – Following the Actors

## 4.1 Introduction

Building on the theoretical foundations established in Chapter 3, which reconceptualised accountability as a performative effect emerging from socio-material translations within actor-networks, this chapter presents the methodological framework employed to trace the dynamic construction, stabilisation, and reconfiguration of pandemic accountability networks in an urban Chinese community. Actor-Network Theory (ANT) is not merely a theoretical lens but a methodological stance, one that demands a radical empirical commitment to "follow the actors" without imposing a priori categories or boundaries (Latour, 2005). This chapter explicates how the principles of ANT: agnosticism, symmetry, and free association, were operationalised through a qualitative case study design to capture the fluid, contested, and materially-mediated processes of accountability enactment during the COVID-19 pandemic.

The chapter is structured into four main sections. Section 4.2 justifies the adoption of a qualitative case study approach, detailing the selection of a single, deeply contextualised urban community in Southern China as a "telling case" (Mitchell, 1984). Section 4.3 elaborates the data collection strategies, including snowball sampling to trace human associations and the method of "following inscriptions" to account for non-human agency. It further details the phased approach to data collection across key periods of the pandemic, enabling the tracing of translation processes over time. Section 4.4 addresses ethical considerations, navigating the complexities of informed consent, anonymity, and researcher reflexivity in a sensitive fieldwork context. Finally, Section 4.5 synthesises how ANT functioned as a research strategy, guiding data analysis through the tracing of translation moments, controversies, and the performative role of inscriptions and obligatory passage points (OPPs).

## 4.2 Qualitative Case Study Design: Focusing on One Urban Chinese Community

This study employs a qualitative case study design to investigate the dynamic processes through which heterogeneous actors co-constructed, sustained, and reconfigured accountability networks during the COVID-19 pandemic in an urban Chinese community. The selection of a single, deeply contextualised case is theoretically informed, aligning with the ontological and epistemological commitments of ANT, which emphasises the situated, emergent, and materially mediated nature of social phenomena (Latour, 2005; Law, 2004). This section justifies the adoption of a qualitative case study approach, delineates the rationale for case selection, and explicates how this design facilitates an exploration of the research questions through an ANT lens.

### 4.2.1 The Rationale for a Qualitative Approach

Qualitative research is particularly suited to inquiries that seek to understand complex, process-oriented, and context-dependent social phenomena (Denzin and Lincoln, 2018). The central research question of this study: "How is accountability enacted, distributed, and reassembled through socio-material networks during a public health emergency?" necessitates an approach that can capture the contingent and often contested interactions between human and non-human actors as they unfold in real-time. Howoever, the quantitative methods, while valuable for identifying patterns and correlations, are ill-equipped to trace the micro-processes of translation, interessement, enrolment, and mobilisation that constitute actor-networks (Callon, 1986; Latour, 2005). As Yin (2018) notes, qualitative approaches excel in answering “how” and “why” questions, especially when the boundaries between phenomenon and context are blurred, which is a key feature of pandemic governance, where policies, technologies, and community practices were deeply entangled.

Moreover, ANT’s commitment to agnosticism (suspending a priori categories), symmetry (treating human and non-human actors equally), and free association (following actors without predefined boundaries) demands a methodology that is flexible, emergent, and sensitive to the actors’ own constructions of reality (Latour, 2005; Venturini, 2010). Qualitative methods, such as in-depth interviews, ethnographic observation, and document analysis, allow the researcher to remain open to unexpected actors, associations, and controversies, thereby avoiding the premature closure of the field of inquiry (Law, 2004). This aligns with what Mol (2002) describes as an “empirical philosophy” approach, where theory and method are co-constitutive, and the researcher’s task is to trace the practices

through which realities are enacted rather than to represent a pre-existing social world.

### 4.2.2 Justification for a Case Study

The rationale for a qualitative case study is deeply rooted in the philosophical underpinnings of ANT and its critique of traditional social science explanations. ANT posits that the social is not a pre-existing domain that can be used to explain phenomena but is itself an unstable achievement, continuously generated through the associations of heterogeneous elements (Latour, 2005). This flat ontology rejects a priori distinctions between micro and macro levels of analysis, arguing that so-called "macro" structures are simply networks that have been successfully lengthened and stabilised through the enrolment of numerous actors (Latour, 1991). Consequently, a detailed study of a single community is not a study of a "microcosm" reflecting a larger society, it is a study of a network in its own right, one that is connected to, and co-constituted by, other networks operating at different scales (municipal, national, global).

Moreover, the decision to focus on a single case is consistent with the epistemological commitments of ANT, which prioritises depth, richness, and processuality over representativeness or statistical generalisation (Latour, 2005; Law, 2004). ANT is not a theory that predicts outcomes, rather, it is a methodology for tracing how outcomes are achieved through the weaving of socio-material relations. As such, the value of an ANT-informed study lies in its capacity to reveal the subtle mechanisms of actor-network formation, stabilisation, and dissolution, which are the mechanisms that are often obscured in larger-scale or more superficially structured research designs.

Furthermore, the case study approach allows for process tracing (George and Bennett, 2005), which is a method particularly congruent with ANT's emphasis on following actors through time and space. By collecting data across multiple phases of the pandemic (e.g., initial outbreak, stabilisation, policy transition, and reopening), this design enables a integrated analysis of how actor-networks formed, held together, and eventually unravelled or reassembled. This temporal depth is essential for capturing the performative and contingent nature of accountability, which ANT conceptualises as a continuous achievement rather than a static condition (see Chapter 3).

A common critique of single case studies is their limited external validity or generalisability (Yin, 2018). However, following the tradition of qualitative and ANT-informed research, this study does not seek statistical generalisation but rather analytical generalisation (Yin, 2018; Parker and Northcott, 2016) or theoretical transferability (Smith, 2018). The aim is to generate insights into the processes of socio-material accountability that may resonate with other contexts where heterogeneous actors negotiate governance in times of crisis. As Stake (1995) argues, the value of a case lies not in its representativeness but in its ability to provide a rich, nuanced understanding of a phenomenon.

### 4.2.3 Site Selection: A Southern Chinese Community as a Telling Case

The selection of a specific research site is a critical methodological decision in qualitative case study research, particularly when employing an ANT lens that seeks to trace the construction of socio-material networks (Latour, 2005). This study was conducted within a residential community in a moderately sized city in Southern China. To protect the anonymity of its residents and officials, the community will be referred to by the pseudonym "the site" or "the community" throughout this thesis. This site was selected not for its statistical representativeness but because it operates as a "telling case" (Mitchell, 1984), a site where the theoretical processes of interest are sufficiently visible and active to allow for detailed analytical scrutiny. The choice was driven by a combination of theoretical, pragmatic, and ethical considerations that align with the overarching research objectives and the ontological commitments of ANT.

*Background of the Research Site*

The site encompasses a population of approximately twelve hundred individuals, predominantly composed of families clustered in three adjacent neighbourhoods. A key characteristic of this community is its stability. The majority of residents have been long-term inhabitants, residing there for over a decade. This extended tenure has fostered a close-knit social fabric characterized by familiarity and frequent interactions, a pre-existing condition that proved crucial during the pandemic for the formation of mutual aid networks and the negotiation of accountability measures, as detailed in Chapters 5 and 6.

As noted by Tomba (2014), the concept of a "community" in China lacks a definitive administrative classification but typically operates under the auspices of a Residents Committee (RC). This site's RC is a formal structure composed of one director, two deputy directors, and seven members, each responsible for different segments of the community. The director coordinates overall activities and liaises with higher-level authorities, while the deputies focus on specific areas such as public health and logistics. The seven members work closely on the ground with residents, addressing concerns and facilitating initiatives. This structure made the RC a pivotal intermediary and a central actant in the pandemic accountability network, responsible for the allocation of human resources, logistics, information, and capital within its geographical boundaries during the crisis.

From late 2019 to early 2023, the community experienced the full sequence of China's pandemic response, including lockdowns, reopening, the re-imposition of restrictions, and daily testing protocols. Remarkably, it maintained a relatively stable situation without significant fatalities or severe outbreaks, and avoided critical shortages of essential supplies even during the most stringent lockdowns. This stability is not a drawback but an advantage for analysis. It means that the profound socio-material transformations and ethical contestations of accountability documented in this thesis (Chapters 5 and 6) were not driven by an absolute catastrophe but emerged from the ordinary processes of governing through a crisis. This allows for a clearer analysis of the governance mechanisms themselves, as they are not overshadowed by complete systemic collapse.

*Rationale for Selection*

The rationale for selecting this site stems from its role as a critical node where the broader abstractions of China's COVID-19 management system were translated into concrete, lived reality. Communities are the foundational building blocks where state directives and public health measures converge with the everyday lives of citizens (Tomba, 2014). They are the sites where policies are not merely implemented but are interpreted, adapted, contested, and reassembled. This makes them ideal arenas for observing the operationalisation of accountability mechanisms at the micro-level. Specifically, several factors made this community an ideal telling case for this investigation:

(1) Governance Typicality and Functional Completeness: The site's governance structure,

with its well-defined RC, is a standard microcosm of urban China. The presence of a formal yet grassroots-linked RC meant that the key human actors in a typical pandemic governance assemblage were present and observable. Furthermore, experiencing the pandemic's full trajectory provided a complete narrative arc for tracing the full cycle of translation, stabilisation, and re-translation within an actor-network, from the initial chaotic problematisation (Section 5.2) to the contentious reassembly covered in Chapter 6.

(2) Social Cohesion and Demographic Profile: The stability and long-term nature of the resident population created a pre-existing social fabric that was both an object and an agent of governance. This allowed the study to investigate how pre-crisis social relations were enrolled into new accountability configurations (e.g., as mutual-aid networks) and how they, in turn, shaped the enforcement and adaptation of top-down measures. The presence of multi-generational families promised a diversity of experiences across age groups, particularly relevant for studying the digital divide.

(3) Managed Crisis Context: The community's experience of a "managed" crisis, which was serious yet without catastrophic breakdown, makes it a profoundly telling case. The pressures that led to the actor-network's destabilisation were those of sustained fatigue, policy ambiguity, and technological decay (Chapter 6), rather than overwhelming caseloads. This allows for a precise examination of how accountability mechanisms fray and reassemble under the more common, yet under-theorized, conditions of prolonged stress and institutional softening.

(4) Ethical and Pragmatic Accessibility: The site's size (approximately 1,200 residents) was manageable for a single researcher to study in depth. Furthermore, the stable and cohesive nature of the community suggested a higher likelihood of obtaining rich, consistent data over time from engaged participants. As a researcher familiar with the regional context, I had linguistic and affective proximity to the field, which was instrumental in building trust with residents and RC staff.

### 4.2.4 Unit of Analysis: The Community as a Socio-Material Assemblage

In line with ANT, the unit of analysis is not the community as a bounded geographic or social entity, but rather the socio-material assemblage that emerged around pandemic

governance within this setting (Latour, 2005; Mol, 2002). This assemblage includes human actors (e.g., RC staff, residents, volunteers, municipal officials), non-human actors (e.g., health codes, quarantine seals, WeChat platforms, data dashboards), and the processes through which they were associated, aligned, and stabilised into networks of accountability. This perspective has several implications for the research design. Firstly, the boundaries of the case are not fixed administratively (e.g., by the physical compound) but are empirically traced through the associations of actors. For instance, municipal health policies, digital platforms like WeChat, and even relatives abroad became part of the community's pandemic actor-network when they influenced local actions and interpretations. Moreover, the design has the phase-based character. The case is studied across multiple phases of the pandemic (detailed in following subsections) to capture how the actor-network evolved, how roles were defined and redefined, and how accountability was performed and contested over time. Also, while focused on a local community, the study remains attentive to how actors and influences from other scales (municipal, national, transnational) entered and shaped the local network. For example, national "Dynamic Zero-COVID" policies were translated into local practices through the mediation of RC workers, health code algorithms, and residents' interpretations.

Overall, this study employs a qualitative case study design to investigate the dynamic processes through which heterogeneous actors co-constructed, sustained, and reconfigured accountability networks during the COVID-19 pandemic in an urban Chinese community. The case study approach is particularly suited to this research for several reasons. First, it allows for an in-depth, contextualised understanding of complex social phenomena that are embedded in specific temporal, spatial, and cultural settings (Yin, 2018). Second, it facilitates the tracing of processes and relationships over time, which is essential for capturing the emergent and performative nature of accountability as conceptualised through ANT lens (Latour, 2005; Law, 2004). Unlike large-N surveys or experimental designs, which often seek to isolate variables and establish generalisable causal relationships, this study aims to trace the fluid associations, translations, and controversies that constitute socio-material networks in practice.

The selected community serves as a critical case that presents the tensions and transformations in China's pandemic governance. As documented in Chapters 5 and 6, this

site experienced the full trajectory of pandemic response: from initial chaos and improvised coordination to provisional stabilisation and eventual fragmentation and reassembly. Within this bounded context, it was possible to trace how human actors (e.g., residents, committee workers, volunteers) and non-human actors (e.g., health codes, quarantine seals, policy documents) became enrolled in networks of accountability, how these networks held together or fell apart, and how they were reassembled through everyday practices of resistance, care, and improvisation.

## 4.3 Data Collection

### 4.3.1 Actor identification

Having established the rationale for a qualitative case study design focused on a single urban Chinese community (Section 4.2), this section presents the specific methodological strategies employed to identify and trace the heterogeneous actors that constituted the pandemic governance assemblage. A core tenet of ANT is its flat ontology, which refuses to grant a priori explanatory privilege to any specific type of actor (e.g., institutional, human, or technological) (Latour, 2005). The social is not a pre-existing domain that causes action but is rather an effect generated through the dynamic associations of humans and non-humans alike (Latour, 2005; Law, 1992). Consequently, the researcher's task is not to begin with predefined categories of who or what matters (e.g., 'the state', 'the community', 'technology') but to empirically discover the actors through the controversies they provoke and the traces they leave in the actor-network (Venturini, 2010). This demands a method of actor identification that is emergent, agile, and sensitive to both human and non-human agency.

This subsection details the two primary, intertwined methods used to achieve this: (1) snowball sampling for tracing human actors and their evolving associations, and (2) following inscriptions for identifying and analysing non-human actors and their mediating roles. It justifies their selection by aligning them with ANT's core principles of agnosticism, symmetry, and free association (Latour, 2005). Furthermore, it explicates how these methods were operationalised in the field across different phases of the pandemic to map the formation, stabilisation, and eventual reconfiguration of the accountability network, as

detailed in Chapters 5 and 6.

#### 4.3.1.1 Agnosticism and the Rejection of A Priori Categories

Traditional social science often begins its inquiry by defining its units of analysis, typically specific groups of human actors (e.g., policymakers, citizens, professionals) (Foucault, 2013). ANT fundamentally challenges this approach through its principle of methodological agnosticism (Callon, 1986; Latour, 1987). The researcher must suspend all preconceived notions about which actors are important, what their interests are, or how they are motivated at the outset of the study (Latour, 2005). The goal is to avoid explaining the phenomenon by invoking pre-existing social forces ('power', 'culture', 'class') and instead to describe how actors themselves, in the course of their interactions, define the situation, establish their identities and interests, and build alliances (Law, 2004).

This agnostic stance is a rigorous methodological commitment to 'follow the actors themselves' (Latour, 2005, p.12). In the context of this study, it meant entering the field without assuming that the Residents Committee (RC) was the most powerful actor, that residents were a homogeneous group, or that technologies like health codes were merely passive tools. As the empirical chapters reveal, the RC's authority was constantly negotiated (Ch. 5), residents were fragmented and their roles shifted dramatically (Ch. 5 & 6), and technologies often acted as decisive, agentic forces that shaped outcomes (e.g., the algorithmic misclassification that triggered the 'False Red Code' crisis in Ch. 6).

Therefore, the method for identifying actors had to be open-ended and responsive to the actors' own constructions of reality. It had to allow for the possibility that an unexpected actor, could be a specific policy document, a malfunctioning thermometer, a viral WeChat voice message. These could become a crucial node in the actor-network, a pivot around which controversies turned and alliances were formed. Snowball sampling and following inscriptions provided this necessary flexibility.

#### 4.3.1.2 Tracing Human Associations: Snowball Sampling

Snowball sampling, a method where existing study participants recruit future subjects from among their acquaintances, is typically used to access hidden or hard-to-reach populations

(Noy, 2008). In an ANT framework, its utility is reconceptualised. It becomes a technique not just for access but for tracing the associations and linkages that constitute the actor-network itself (Latour, 2005). The chains of referral are not merely logistical pathways, they are empirical traces of the social connections that actors themselves deem relevant.

The snowball process in this study began with an initial, purposive selection of "entry points" believed to be information-rich based on the preliminary understanding of the community structure (Patton, 2022). These included: (1) The Director and two Deputy Directors of the RC, as the formal coordinators; (2)Two identified 'Building Representatives' (楼长), who were suggested by the RC as active community members; (3) A local small business owner (the noodle shop owner from Ch. 5).

Interviews with these initial actors were semi-structured, focusing on their roles, experiences, and interactions during the pandemic. Crucially, at the end of each interview, participants were asked: "Who else was important in making things happen (or not happen) during the pandemic here?" and "Were there any specific tools, rules, or objects that became especially important?" The first question aimed to expand the network of human actors, while the second began the process of identifying non-human actants, to be further explored through inscriptions. Figure 4-1 provides a schematic representation of this snowball sampling process.

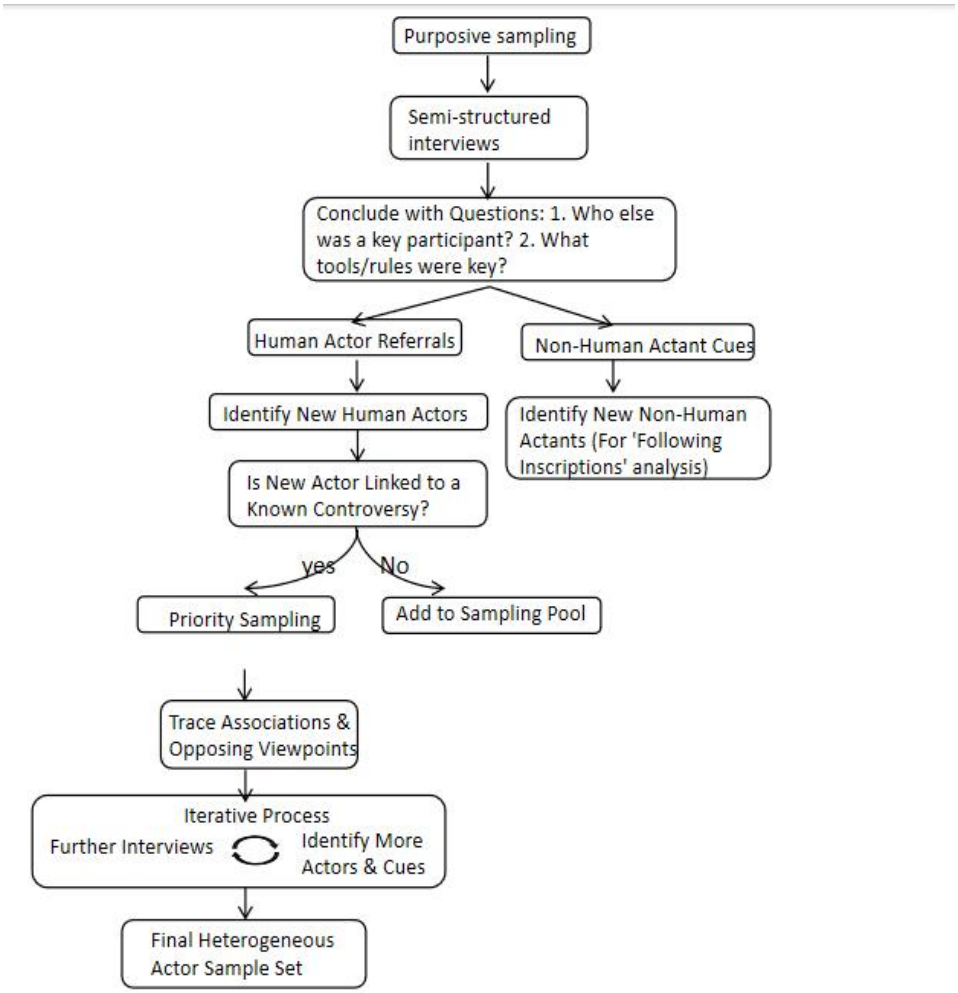


Figure 4-1: Snowball Sampling Process for Tracing Human Actor Associations

This process quickly revealed the actor-network's heterogeneity. For example, an interview with an RC staff member might lead to a volunteer ("Big White"), who in turn would lead to a group of residents who organised a mutual-aid group, who would then mention a specific WeChat group where decisions were made. The sampling strategy was adaptive, as controversies emerged in the narratives (e.g., disputes over quarantine seal policies), the snowball was deliberately directed towards actors on different sides of the issue to capture the full range of perspectives and the dynamics of the controversy (Venturini, 2010). This allowed for the mapping of competing actor-networks, such as when formal RC protocols were circumvented by informal resident alliances (Ch. 6.4).

Snowballing epitomises the principle of "free association" (Latour, 2005). The researcher follows the actors' own leads, allowing them to define the boundaries of the actor-network. The actor-network's scope is not limited by the researcher's initial assumptions but is

empirically revealed through the referrals. Morover, the chains of referral often mapped onto the processes of translation described by Callon (1986). For instance, a referral from an RC staff to a key volunteer often indicated a successful moment of interessement and enrolment. Conversely, a resident's refusal to refer to the RC or their active direction towards alternative actors (e.g., a specific Building Rep) could signal resistance or a competing problematisation.

Also, the snowball process helped identify who actors regarded as legitimate 'spokespersons' (Callon, 1986) for various collectives. For instance, the fact that multiple residents independently referred to the same Floor Rep or volunteer as 'the person who got things done' was a powerful indicator of that actor's mobilising power within the actor-network.

At the end, a total of 42 participants were enrolled through this process, comprising 8 RC staff, 22 residents, 6 volunteers ("Big Whites"), 3 local business owners, and 3 municipal health inspectors. While the RC initially facilitated access by introducing the researcher to key informants (e.g., Building Representatives and active volunteers), their role as gatekeepers did not preclude access to dissenting or marginalised voices. Of the 58 individuals approached (directly or through referrals), 16 declined to participate, primarily citing time constraints or pandemic-related stress rather than overt distrust or RC influence. Notably, several participants who were initially hesitant were later recruited through alternative chains (e.g., via mutual-aid group members), demonstrating the resilience of the snowball method in circumventing potential gatekeeping biases.

However, snowball sampling has limitations, primarily the risk of homogeneity bias, where the sample over-represents tightly connected groups and misses isolated actors or dissenting voices (Noy, 2008). To mitigate this, the research strategy incorporated two corrective measures. Firstly, deliberately seeking out actors who were mentioned in controversies but not named as affiliates (e.g., seeking the 'resident who threatened to sue the RC' mentioned in Ch. 5.2.2). Second, the analysis of non-human actors and the digital and material traces they left behind provided an alternative pathway to identifying human actors who might have been missed by the snowball process, as detailed next.

#### 4.3.1.3 Tracing Non-Human Agency: Following Inscriptions

If snowball sampling is the primary method for tracing human associations, then following inscriptions is its essential counterpart for tracing non-human agency. In ANT, inscriptions are the material traces left by actors (texts, images, data, tools, architectural arrangements) that allow them to act at a distance and make their claims durable and mobile (Latour, 1990). They are "the central means through which reality is given form" (Law, 2004, p. 45). To ignore them is to ignore the fundamental materiality of the actor-network and to fall back into a purely social explanation, which ANT explicitly rejects.

The research treated the community as a landscape of inscriptions to be collected and analysed. These fell into several categories:

| **Category** | **Type of Data** | **Specific Forms/Examples** |
|---|---|---|
| Policy Documents | Textual Inscriptions | Municipal lockdown notices; National Health Commission 'Optimised Guidelines'; Internal Resident Committee (RC) SOPs. |
| Digital Traces | Screenshots (with consent) | ***WeChat Groups***: Announcements, policy debates, rumor sharing, mutual aid organisation. Traced evolution from dormant channels to battlegrounds to hubs. |
| | | ***Health Code Interfaces***: Screenshots of the tricolour (green, yellow, red) system and instructions. |
| | | ***Data Dashboards***: Photographs of the public-facing dashboard in the community lobby. |
| Material Artefacts | Photographs & Notes | ***Quarantine Seals & Scanners:*** Their deployment on doors. |
| | Physical Objects | ***Handwritten Logs & 'Green Stickers'***: Low-tech tools that emerged. |
| | | ***Infrared Thermometers***: Their physical introduction and use. |
| Physical Arrangements | Photographs & Maps | Layout of temperature checkpoints; positioning of shared 'medicine baskets'; makeshift barriers at community gates. |

Table 4-1: Typology of Inscriptions Collected to Trace Non-Human Agency

Following inscriptions operationalises the principle of symmetry. Analysing a WeChat debate and the material affordances of the WeChat platform that shaped it (e.g., screenshot function, message persistence) with the same seriousness as the human sentiments expressed, ensures non-humans are not treated as neutral backdrops, but as active participants (Orlikowski, 2007). Also, inscriptions render the agency of non-humans analytically visible (Boedker and Chua, 2013). Researchers cannot interview a health code, but could analyse how its algorithmically generated colour (an inscription) compelled specific actions from guards and residents, how it failed, and how those failures triggered actor-network disruptions. The 'False Red Code' incident (Ch. 6) is a prime example where following the inscription (the faulty code) was essential to understanding the controversy.

Notably, inscriptions in this study explain how actors like municipal authorities or national policymakers exert influence locally. Their power is mediated through the circulation of inscriptions, such as policy documents, algorithm updates, reporting templates, that are taken up, interpreted, and enacted by local actors (Robson, 1992). For instance, the study traced how a national policy PDF was translated into a local argument and then into a material practice (or refusal).

#### 4.3.1.4 The Interplay of Snowballing and Inscriptions

In practice, these two methods were not sequential but formed an iterative cycle that drove the investigation forward. The process was not "interview people, then look at documents", but a continuous back-and-forth. For example, a snowballed interview with an RC staff would reveal the importance of a specific inscription ("The most difficult thing was when the dashboard froze, we had no data to show"); following that inscription (the frozen dashboard) would lead to new human actors to snowball (e.g., the resident who started a crowdsourced "symptom map" in their WeChat group to compensate for its failure); analysing that new inscription (the symptom map) would reveal a new set of associations and power dynamics (e.g., the Floor Rep emerging as a data curator), leading to more interviews.

This iterative process allowed the research to construct a multi-dimensional map of the actor-network. It revealed how human actors enlisted non-humans to strengthen their claims (e.g., RC using policy documents to justify lockdowns) and how non-humans enlisted humans to enact their programs of action (e.g., health codes recruiting security guards as enforcers). It showed how both could fail, resist, or be repurposed, leading to the moments of breakdown and creative reassembly that are central to the analysis in empirical chapters.

### 4.3.2 Research Methods

Having established the rationale for a qualitative case study and detailed the strategies for identifying both human and non-human actors through snowball sampling and inscription analysis, this section elaborates on the specific research methods employed to gather rich, contextually-grounded data. These methods (semi-structured interviews, ethnographic observations, document analysis, and social media ethnography) were interwoven to trace the dynamic processes within the pandemic governance actor-network. Each method is justified in terms of its congruence with ANT's ontological and epistemological commitments, particularly its emphasis on processuality, materiality, and symmetry between human and non-human actors (Latour, 2005; Law, 2004). Together, they form a methodological assemblage capable of capturing the contested and often invisible work through which accountability was performed and reassembled during the pandemic.

#### 4.3.2.1 Semi-Structured Interviews

Semi-structured interviews served as the primary method for capturing the lived experiences, interpretations, and negotiations of human actors within the actor-network. This approach is aligned with ANT's commitment to "following the actors" and its agnostic stance towards pre-defined categories (Latour, 2005). Unlike fully structured surveys, which impose fixed categories and risk missing the emergent and contested nature of actor-networks, or completely unstructured conversations, which may lack focus on the phenomena of interest, semi-structured interviews offer a balance between flexibility and thematic guidance (Brinkmann, 2013). This is crucial for ANT, as it allows the researcher to remain open to unexpected actors, associations, and controversies while still exploring core theoretical themes such as agency, negotiation, and resistance (Czarniawska, 2007).

As advocated by Venturini (2010), the goal is to let the actors define the actor-network through their own accounts of controversies and alliances.

A total of 52 semi-structured interviews were conducted with a diverse range of human actors. The specific number of interviews conducted with different types of interviewees can be found in the appendix 1. Each interview lasted between 45 and 90 minutes and was conducted in Mandarin, audio-recorded with consent, and later transcribed verbatim. Interviews were conducted for multiple phases of the pandemic to capture temporal shifts in actors' roles, perceptions, and alliances, a phase-based dimension essential for tracing translation processes (Callon, 1986).

The interview guide was designed around open-ended questions and narrative prompts aimed at eliciting action, association, and mediation. The logic behind the design was to trace the moments of translation without leading the participant. The main thematic areas and sample questions, along with their specific theoretical objectives, are detailed in the table below:

| Thematic Area | Sample Questions | Theoretical Objective |
|---|---|---|
| Problematisation | "Can you describe what changed for you and your community when the pandemic first started? What became the biggest problem to solve?" | To identify how the crisis ruptured existing routines and how an OPP (e.g., "containment") emerged. |
| Interessement & Enrolment | "Who were the key people or things you had to work with to get through lockdowns? Were there any tools or rules that were particularly effective (or ineffective) in getting people to cooperate?" | To trace the devices (human and non-human) used to lock actors into roles and the negotiations involved in enrolment. |
| Mobilisation & Spokespersons | "How did you know what the 'official' rules were? Who or what was the most trusted source of information? Were there ever disagreements about what was the right thing to do?" | To identify the spokespersons (e.g., health codes, RC, volunteers) for the actor-network and contestations over their legitimacy. |
| Agency of Non-Humans | "Tell me about a time the health code/QR scanner/quarantine seal didn't work as expected. How did you and others react? What was the outcome?" | To apply symmetry: explore the agentic role of non-humans in enabling or disrupting actor-network stability. |
| Resistance & Reassembly | "Were there times you felt a rule was unfair or impractical? What did you do? Did you and others find alternative ways to get things done?" | To uncover moments of resistance, tactical disobedience, and grassroots reassembly (de Certeau, 1984). |

Table 4-2: Semi-structured Interview Guide

These questions were designed to trace actors' own constructions of reality and the actor-networks in which they were embedded (Kvale and Brinkmann, 2009). The iterative analysis of interviews also informed subsequent rounds of data collection, embodying the emergent and adaptive nature of ANT research. Early interviews revealed the centrality of WeChat groups in the accountability network, leading to a greater focus on digital ethnography. Similarly, emerging controversies (e.g., over quarantine seal durations) were probed in later interviews to understand how they were resolved or amplified, thus following the actors as the controversy itself evolved (Venturini, 2010).

#### 4.3.2.2 Observations

Ethnographic observations were essential for capturing the embodied, material, and often tacit dimensions of accountability that interviews alone could not reveal. ANT posits that actor-networks are not only discursive but are enacted and stabilised through everyday practices, material arrangements, and bodily routines (Latour, 2005). Observations allow the researcher to move beyond what actors say they do to witness what they actually do, including the ways they interact with and are shaped by non-human actors (Shove et al., 2012). This method is fundamental to ANT's materialism and its focus on practice (Mol, 2002). By being present in the field, the researcher can trace the "missing masses" of mundane artefacts and routines that are central to actor-network functioning but often remain invisible in purely discursive accounts (Latour, 1992).

Over the course of 10 months (with intensive periods during lockdowns and reopenings), more than 120 hours of observational data were collected (See Appendix 6 for details). These observations focused on key sites and practices where accountability was performed, always with the aim of following the actors and the associations they formed:

| Sites | Observation Focus |
|---|---|
| Community gates | The frontline where temperature checks, health code scans, and entry permissions were negotiated between residents, guards, scanners, and policy documents. |
| RC office | The point where policies were interpreted, data were recorded into dashboards and logs, and disputes were mediated, revealing the translation of abstract rules into local action |
| Resident gatherings | Sites like nucleic acid testing queues or mutual-aid distribution points, where collective norms and ad-hoc collaborations emerged. |
| Domestic settings | Residents interacted with health apps, received deliveries, or engaged in home quarantine, showing how governance protocols permeated private life. |

Table 4-3: Key Sites for Ethnographic Observation

The specific observation sites were not chosen a priori but were identified empirically through the ongoing process of following the actors and the controversies they were engaged in (Latour, 2005). Initial interviews and preliminary analysis pointed to critical junctures where the actor-network was most active, contested, and visible. These sites functioned as obligatory passage points (OPPs) (Callon, 1986) or arenas where the core processes of translation were intensely performed. For instance, the community gate, was a

non-negotiable choke point where policies materially converged with daily life, making it an ideal site to observe the interplay of human compliance, resistance, and the agency of scanning technologies. The RC office was selected as it served as the actor-network's translation hub, where abstract policies were interpreted and transformed into local directives. Similarly, domestic settings became crucial observation sites as the pandemic progressed, as the focus of governance shifted towards the private sphere, revealing how accountability was enacted within the home. Thus, each site was selected for its importance in tracing the socio-material practices that constituted the pandemic accountability assemblage, ensuring observations captured the actor-network at its most dynamic points.

Field notes were taken using a “thick description” approach (Geertz, 1973), detailing actions, conversations, and crucially, the material setups (e.g., the placement of scanners, the design of quarantine seals, the layout of dashboards) that enabled or constrained certain behaviours.

Observations were particularly vital for capturing moments of breakdown and improvisation. When the health code system malfunctioned, researchers witnessed how RC staff and residents collaboratively developed workarounds, such as using paper-based logs or relying on personal recognition. These moments were critical for understanding how actor-networks reassemble in the face of failure, and for seeing the principle of free association in action, as actors formed new, unexpected connections to solve problems.

#### 4.3.2.3 Document Analysis

Document analysis was used to trace the formal and informal inscriptions that stabilised, circulated, and contested accountability relations. In ANT, documents are not merely passive records of action but active “immutable mobiles” (Latour, 1987). They are material artefacts that enable action at a distance by freezing complex and fluid realities into stable, combinable, and transportable forms. They are crucial actants in the processes of translation, serving as instruments of interessement, enrolment, and mobilisation (Law, 1992; Robson, 1992). Following these inscriptions is therefore a primary method for tracing how actor-networks achieve stability and how power is exercised across time and space.

A wide range of documents were collected and analysed, including:

| Documents | Analysis Focus |
|---|---|
| Policy texts | National and municipal pandemic guidelines, internal RC memos, standard operating procedures (SOPs). These were analysed to see how they defined problems and prescribed solutions, acting as obligatory passage points. |
| Digital traces | Screenshots of health code interfaces, data dashboards, QR code posters. These were analysed for their affordances and constraints: how their design shaped user behaviour. |
| Material artifacts | Physical quarantine seals, handwritten health logs, community bulletins. These were treated as material inscriptions that embodied authority and norms. |
| Communications | Official WeChat announcements, complaint logs. These revealed the ongoing negotiations and controversies within the actor-network. |

Table 4-4: Categories of Documents Analysed

Documents were analysed using a qualitative discourse analysis approach (Introna, 2011), but with an ANT-informed sensitivity to how they acted as mediators rather than neutral carriers of information. For example, a municipal policy PDF was analysed not only for its content but also for how it was cited, misinterpreted, or weaponized in local disputes (as seen in the "precision prevention" controversies in Chapter 6). Similarly, the design of a health code interface, e.g., its colour scheme, timing mechanisms, and error messages, was examined for how it shaped user behaviour and trust, effectively enacting a specific form of algorithmic accountability (Introna, 2016).

This method also allowed the researcher to follow the actors across scales. For instance, a national policy document would be translated into a local RC directive, which would then be inscribed into a WeChat message, a paper notice, and finally into a resident's daily routine. Following these chains of translation revealed how accountability was materially assembled and contested, and how the meaning and effect of an inscription could change as it moved through the actor-network.

#### 4.3.2.4 Social Media Ethnography

Given the central role of WeChat in the community's pandemic response—as a platform for official announcements, rumor dissemination, mutual aid, and resistance, social media

ethnography was an indispensable method. Also, digital platforms are essential non-human actors in ANT terms, possessing specific affordances (e.g., persistence, scalability, visibility) that actively shape how actor-networks form, operate, and falter (Sinclair, 2019; Orlikowski, 2007). They are not mere conduits for human communication but are mediators that transform the messages, relationships, and power dynamics they carry (Latour, 2005). Social media ethnography allows the researcher to "follow the actors" into the digital realm, which is an integral part of the modern socio-material assemblage (Hine, 2020).

This study participated in and observed 12 community WeChat groups over 18 months, with roles ranging from lurker to active participant (when appropriate and ethical). Data collected included: (1) textual messages (policy updates, debates, rumors); (2) Voice messages ; (3) images (e.g., screenshots of health codes, photos of quarantine seals); (4) Video clips (e.g., tutorials on mask-wearing). Notably, digital ethnography required continuous ethical reflexivity. The practical implementation of consent in the context of large, dynamic WeChat groups requires acknowledgement of its limitations. Verbal consent was obtained from the administrators of all 12 WeChat groups for the researcher to join and observe for academic purposes. For any direct quotes from identifiable members, individuals were contacted privately to seek verbal consent. This process was manageable for targeted analysis but impractical for every message across all groups, which could contain hundreds of participants and thousands of messages.

This method allowed the researcher to trace how controversies unfolded in real time, following the actors as they debated and formed alliances. For instance, when a resident posted a screenshot of a conflicting policy document, the ensuing debate revealed competing problematisations and the enrolment of new spokespersons. Similarly, the circulation of affective messages, such as fear, solidarity, anger, showed how emotions acted as actants within the actor-network, influencing compliance and resistance (Boedker and Chua, 2013). The WeChat group itself became a key non-human actor, a "hybrid forum" (Callon et al., 2009) where the pandemic and its accountability mechanisms were collectively defined and contested.

### 4.3.3 Data Collection Periods Across Pandemic Phases

As this study has established the rationale for a qualitative case study and detailed the strategies for identifying actors, a critical methodological question remains: when should data collection occur to capture the dynamic processes inherent in actor-network formation, stabilisation, and transformation? ANT posits that actor-networks are not static entities but are perpetually in a state of "becoming", achieved through continuous processes of translation (Callon, 1986; Latour, 2005). A snapshot approach would misrepresent this reality, freezing a actor-network in time and obscuring the processes of interessement, enrolment, and mobilisation that constitute it. Consequently, the data collection intentionally structured across the key phases of the COVID-19 pandemic as experienced within the community. This approach is essential for operationalising ANT's core mandate to "follow the actors" through time and space, allowing for the empirical tracing of network morphogenesis: how the accountability assemblage emerged, held together, frayed, and was reassembled (Law, 1992; Venturini, 2010).

This section justifies the design by first outlining the distinct pandemic phases that structured the data collection timeline. It then details the specific data collection activities undertaken for each phase, explaining how these were tailored to capture the dominant translation processes at play. Finally, it synthesises how this phased approach enables an ANT analysis, aligning methodological practice with the theoretical imperative to study processes, not just outcomes.

#### 4.3.3.1 Justifying the Phase-Based Approach

A phase-based case study design is important for research questions concerned with process, change, and causality over time (Yin, 2018). For an ANT-informed study, this is not merely an advantage but a necessity. As demonstrated in Chapters 5 and 6, the pandemic governance network did not appear fully formed, it was assembled through the four moments of translation (Callon, 1986). Its subsequent stability was always precarious, contingent upon the ongoing maintenance of sociomaterial alliances, and it eventually underwent significant re-translation. A study conducted only at the height of the lockdown or only after policies had softened would capture merely a single, decontextualised moment in this continuous flow, failing to see how roles were defined, contested, and redefined, or how non-human actors gained and lost their agentic force.

Conversely, collecting data across multiple phases allows the researcher to specifically trace the translation processes. It enables the documentation of how problematisations shift (e.g., from a generalised viral threat to the specific challenges of "precision prevention"), how interessement devices are deployed and sometimes fail, how actors are enrolled and may later resist, and how spokespersons are mobilised and can lose legitimacy. Moreover, the moments of breakdown and controversy (e.g., the "False Red Code" incident, the policy shift to "precision prevention") are not anomalies, but are essential for understanding the actor-network's structure. As Latour (2005) argues, controversies reveal the hidden actors and fragile connections that are black-boxed during periods of stability. A phase-based design allows the researcher to be present for these revelatory moments.

Instead of seeking independent variables that cause change, ANT traces how effects are generated within the actor-network itself (Latour, 2005). For example, the fatigue of RC staff (a human actor) was caused by the malfunctioning of health codes (a non-human actor) and ambiguous policies (another non-human actor), which in turn led to new improvisations. Only a design that observes these interactions over time can capture this distributed and relational form of causality. The pandemic itself provided a natural chronology that structured this inquiry.

#### 4.3.3.2 Phase 1: Initial Response and Actor-Network Formation (Early 2020 - Mid-2020)

The initial phase was defined by acute crisis, uncertainty, and the improvised emergence of new socio-technical arrangements. The primary objective of data collection for this period was to document the rupture of pre-existing routines and the initial processes of problematisation and interessement (Callon, 1986) through which a new pandemic governance network began to cohere.

Data collection strategies for this period were tailored to address the temporal disconnect between the research commencement date and the historical events under examination. Retrospective interviews were conducted with key participants including RC staff, early volunteers, and residents, to capture detailed accounts of their experiences during the first lockdowns. These interviews specifically probed daily routines, interaction patterns, and

material tool engagement to reconstruct the evolving actor-network.

Complementing these subjective accounts, digital ethnography was performed on archived WeChat group communications. It provides documentation of the chaotic interactions, contested interpretations, and emerging roles through sequential analysis of time-stamped messages. Further methodological rigor was achieved through collection and analysis of historical digital artefacts, including screenshots of official policy announcements, photographs of makeshift community gate barriers shared by residents during the period, and early iterations of health code interfaces. This combination enabled a reconstruction of the actor-network's formation phase, capturing the discursive, material, and human elements as they began to associate under conditions of unprecedented crisis.

#### 4.3.3.3 Phase 2: Provisional Stabilisation and Enrolment (Mid-2020 - Late 2021)

As the initial shock subsided, pandemic governance practices became increasingly formalised and routinised. The core objective for this phase was to investigate the processes of enrolment and mobilisation (Callon, 1986): how the provisional associations formed during the crisis were solidified into more stable roles, routines, and hierarchies, and how certain actors became accepted as legitimate spokespersons for the actor-network.

Again, retrospective interviews formed the cornerstone of this phase's data collection, specifically designed to elicit participants' recollections and interpretations of the normalisation processes, the formalisation of emergent roles, and their subjective experiences during this critical stabilisation period. These narrative accounts were complemented by the analysis of stabilising inscriptions—material artefacts that concretised the emerging actor-network configurations, including internal RC Standard Operating Procedures (SOPs), compliance logs, and other institutional documents that served as tangible evidence of accountability practices becoming embedded in daily routines.

#### 4.3.3.4 Phase 3: Policy Softening and Actor-Network Fraying (Late 2021 - Late 2022)

This phase was marked by significant national policy shifts towards "precision prevention"

and growing signs of socio-technical fatigue. The research objective shifted towards capturing the unravelling of the stabilised actor-network: the points of failure, the emergence of resistance, and the controversies that exposed the fragility of existing translations.

Data collection for this period became more targeted, focusing on following controversies, as they emerged. The snowball sampling technique was particularly valuable here, as initial interviews about "challenges" or "changes" would lead me to actors on different sides of a dispute, such as residents refusing new quarantine rules or RC staff expressing moral distress over ambiguous directives. Interview questions were refined to explore these fissures: "Tell me about a time when a rule or tool didn't work as expected. How did you and others respond? Were there disagreements about what was the right thing to do?" Digital ethnography was crucial for tracking these controversies, as WeChat groups again became battlegrounds where residents cited conflicting policy documents or shared stories of health code glitches. I paid close attention to the material traces of failure: collecting screenshots of error messages, photographs of outdated quarantine seals that were being challenged, and records of the frozen data dashboard. This phase was less about observing routine and more about tracing the decay of routines and the reflexive questioning of the actor-network's core OPP, requiring a method that was responsive to conflict.

#### 4.3.3.5 Phase 4: Re-translation and Grassroots Reassembly (Late 2022- Mid-2023)

In the final phase, as top-down control fragmented, the field site became a hive of grassroots improvisation. The central objective was to document the processes of re-translation and heterogeneous engineering (Law, 1992): how actors were reassembling new accountability configurations from the remnants of the old actor-networks.

The methods shifted towards a focused ethnography of innovation. I conducted a final round of interviews specifically with actors identified as being at the heart of reassembly efforts: the "Building Representatives" organising building-level mutual aid, the "Big White" volunteers orchestrating medicine deliveries, and the RC staff who were pragmatically bending rules to meet community needs. Questions were designed to uncover the logic of bricolage: "You needed to get insulin to a resident with a red code. What did you do? What tools or people did you enlist? How did you justify this action?"

Simultaneously, my observations focused on new socio-material practices: I documented the materiality of the "community green stickers," the operation of the shared medicine baskets in building lobbies, and the use of paper-based logs and bicycles to replace broken digital systems.

This "material ethnography" involved not just observing but also photographing and analysing these new inscriptions as active participants in the reassembled actor-network. The goal was to understand how these new, often low-tech, artefacts were enrolled to stabilise a new, more localised form of accountability based on care and pragmatism, thus providing a complete story from actor-network formation to its dissolution and creative reassembly.

This phased approach was not merely a logistical plan, but the operationalisation of ANT' s methodological principles. Each phase presented a different configuration of the actor-network, demanding a slightly different emphasis in data collection methods:

| Phases | ANT Processes | Primary Data Collection Methods | Empirical Focus | Contribution to Research Question |
|---|---|---|---|---|
| Phase 1 | Problematisation & Interessement | Digital ethnography, retrospective interviews, analysis of early digital artefacts. | Tracing the rupture of routines, the emergence of new actors, and the initial establishment of the "containment" OPP. | The initial co-construction of the accountability problem and the first attempts to lock actors into new roles. |
| Phase 2 | Enrolment & Mobilisation | Semi-structured interviews, analysis of stabilising inscriptions (SOPs, dashboards). | Documenting the routinisation of practices, formalisation of roles, and the stabilisation of spokespersons. | How the networked accountability system was solidified and performed through socio-material routines |
| Phase 3 | Unravelling & Controversy | Targeted interviews following controversies, digital ethnography, collection of inscriptions of failure. | Capturing points of failure in the actor-network, resistance to existing translations, and the erosion of the OPP. | The fragility of the accountability network and the conditions that led to its disintegration. |
| Phase 4 | Re-translation & Heterogeneous Engineering | Interviews, material ethnography of new artefacts, focused observations of new practices. | Investigating grassroots improvisation and the enrolment of new human and non-human actors into alternative configurations. | How actors renegotiated and reassembled accountability from the ground up when formal structures faltered. |

Table 4-5: Phase-based Data Collection Strategy

By moving beyond a snapshot, this design allows the analysis in Chapters 5 and 6 to present accountability not as a fixed thing but as a precarious achievement woven through time by the continuous and contested negotiations. It provides the empirical basis to argue that accountability is performative and emergent, as outlined in Chapter 3, because it shows it being performed and emerging differently across different moments in the actor-network's evolution.

## 4.4 Ethical Considerations

Conducting ethnographic research within a tightly-knit urban community during a public health crisis necessitates a rigorous, context-sensitive approach to research ethics. This is especially critical in the Chinese context, where societal norms, state surveillance, and collective values intersect uniquely with individual rights and vulnerabilities. This section presents the ethical framework that guided this study, from initial design to fieldwork execution and data dissemination. It justifies the strategies employed to navigate complex ethical terrain, ensuring the research adhered to the core principles of: informed consent, privacy and anonymity, minimisation of harm, and researcher reflexivity. Furthermore, it explicates how these principles were operationalised in a context where digital surveillance is pervasive, community hierarchies are pronounced, and discussing governance can be politically sensitive.

### 4.4.1 Gaining Formal Ethical Approval

Prior to any contact with the field site, this study received full ethical approval from the University of Glasgow's Research Ethics Committee. The approval process involved submitting a detailed protocol that outlined the study's aims, methodology, risk assessment form, and comprehensive mitigation strategies. This protocol detailed the procedures for obtaining informed consent, data anonymisation, and secure data storage. This formal approval ensuring the research design was scrutinised against internationally recognised benchmarks for ethical social science research (Israel andHay, 2006).

### 4.4.2 Gaining Informed Consent

The principle of informed consent: ensuring participants voluntarily agree to join based on a clear understanding of the research, was important but required careful contextual adaptation (Bryman, 2016). In this community, power dynamics, collective norms, and digital communication channels shaped the consent process.

*Processual and Verbal Consent*

Standard written consent forms, while standard in Western contexts, can be viewed with suspicion in China, associated with legalistic formality or officialdom (Heimer and Thøgersen, 2006). To avoid creating anxiety or distrust, the primary method of obtaining consent was verbal and processual. Before interviews or observations, I explained the study's purpose in accessible language: to understand how the community worked together

during the pandemic. It was explicitly stated that I was a student conducting academic research, not a journalist or government inspector. Participants were clearly informed of their right to refuse to answer any question, to pause or stop the recording at any time, and to withdraw their participation entirely without any negative consequences. This verbal explanation and the subsequent recording of consent were conducted in Mandarin. This approach aligned with ethical guidance advocating for context-appropriate consent methods that prioritise participant comfort and understanding over rigid formalism (Wiles et al., 2007).

*Consent in Digital Ethnography*

Obtaining consent for observing and using data from WeChat groups presented a distinct challenge. Following the principles of "networked consent" (Hudson and Bruckman, 2004), I first obtained permission from the group administrators to be part of the group for research purposes. For any direct quotes, identifiable members were contacted privately to seek explicit consent. General patterns and themes observed in the groups were used as part of the broader ethnographic data, but direct, attributable quotations were only used with individual permission. Screenshots were anonymised meticulously, blurring all names, profile pictures, and identifying details before being used in analysis.

*Formal Gatekeeper Authorisation*

Gaining formal, written authorisation from the RC was an essential first step for site access and a prerequisite for the university's ethical approval. Prior to commencing fieldwork, a formal online meeting was held with the RC director. The research aims, methods, and ethical commitments (particularly regarding anonymity and data handling) were explained in detail. A stamped agreement, specifying the scope of the research and the RC's role as a facilitator rather than a mandatory participant, was signed by the RC leadership. This document was submitted to the university ethics committee as evidence of gatekeeper approval and site access. This formal step was crucial for legitimising the researcher's presence within a state-affiliated hierarchy.

Also, while RC's support was crucial for access, it was ethically necessary to ensure that their influence did not coerce participation. It was made clear to the RC that their role was to facilitate introduction, not to mandate participation. Similarly, when using snowball

sampling, participants were assured that their referrals would not be shared with the RC or others without their permission, protecting them from any potential pressure from within their social networks.

### 4.4.3 Ensuring Anonymity and Confidentiality

Protecting the identities of the community, its residents, and officials was a non-negotiable ethical imperative, given the potential sensitivities around criticising pandemic measures or local governance (Tilley and Woodthorpe, 2011). A multi-layered strategy for anonymity was employed.

*Pseudonymisation*

The city and the community were assigned pseudonyms. All individuals, including residents, RC staff, volunteers, were referred to by codes (e.g., RC Staff 1, Resident F1M1) rather than names or real titles. Identifying details such as specific job titles (beyond broad categories like "RC staff"), exact building locations, and other potentially identifiable information were altered or omitted.

*Data Management*

All digital data (audio recordings, transcripts, field notes, digital documents) were stored on a password-protected encrypted hard drive. Physical notes were kept in a locked cabinet. All data will be destroyed ten years after the completion of the project, in accordance with university policy.

*Handling Sensitive Discourse*

The research captured criticisms of policies and frustrations with enforcement. To protect participants, such data was presented in the analysis as aggregated themes or very carefully anonymised quotes, ensuring they could not be traced back to any individual. This was crucial to avoid any potential repercussions for participants who expressed dissenting views (Van Der Walt, and Steyn, 2019).

### 4.4.4 Minimising Harm

The research aimed to minimise any potential harm, be it psychological, social, or political.

For instance, discussing the pandemic could trigger distress. I was prepared to pause or halt interviews if participants became upset, and had a list of local mental health support services available to provide if needed (though this was never required). The interview style was empathetic and non-confrontational. Also, the study was designed to avoid creating or exacerbating conflicts within the community. Questions were framed to understand experiences rather than to assign blame. Small tokens of appreciation (e.g., sharing tea during interviews, assisting with minor digital literacy questions for elderly residents) were offered as gestures of gratitude and reciprocity, aligning with local customs of mutual exchange (Guillemin and Gillam, 2004).

### 4.4.5 Reflexivity

A core tenet of ANT is its rejection of the detached, objective observer model traditionally valorised in positivist social science (Latour, 2005; Law, 2004). Instead, ANT posits that the researcher is inevitably and constitutively entangled within the actor-network they seek to study. The researcher is not a neutral outsider looking in, but an active participant whose presence, actions, interpretations, and methodological choices influence the formation, stabilisation, and transformation of the actor-network (Law, 2004; Mol, 2002). This ontological stance necessitates a rigorous and continuous practice of reflexivity: a critical self-awareness of how the researcher's positionality, assumptions, and interactions shape the research process and its outcomes (Bourke, 2014). In the context of this study, reflexivity was not merely an ethical add-on but a methodological imperative. This subsection details how reflexivity was operationalised throughout the research, examining the researcher's dual role as both an observer and an actant within the pandemic governance network, and how this positioning influenced data collection, analysis, and theoretical insights.

*Researcher as an Actant, Not an Outsider*

ANT's flat ontology dissolves the conventional subject-object dichotomy between researcher and researched. The researcher is another actor, albeit one with specific resources, intentions, and capacities, entering an already dynamic field of associations (Latour, 2005). The goal is not to eliminate the researcher's influence (an impossibility in ANT's relational worldview), but to trace it, to understand how the researcher becomes enrolled in the actor-network, and how the network, in turn, is transformed by the researcher's presence (Venturini, 2010). As Law (2004, p. 84) argues, "methods are not

ways of representing the world but ways of intervening in it… they participate in the enactment of realities." This perspective reframes reflexivity from a concern with bias minimization to an analytical task: How did the researcher, as a socio-material actor, mediate the controversies, alliances, and translations that constitute the actor-network?

In this study, I was a potent actant due to several facets of the positionality. As a Mandarin-speaking student with familial roots in the community, I held an insider-outsider status (Nowicka and Ryan, 2015). This facilitated deep linguistic and cultural access, enabling an empathetic understanding of nuanced social interactions, policy discourses, and community sentiments that might be opaque to a complete outsider. For instance, understanding the moral weight of phrases like "守护家园" (safeguarding our homeland) or the social significance of "面子" (face/reputation) was crucial for interpreting how accountability was performed.

However, this familiarity risked creating analytical blind spots. My cultural proximity meant that certain practices, which might appear remarkable or contentious to an external observer, could initially be perceived by me as 'normal' or 'natural.' For example, the rapid emergence of mutual aid networks, while impressive, aligned with cultural narratives of collectivism and community self-help. In early analysis, I risked under-theorizing this phenomenon by taking its emergence somewhat for granted, rather than immediately recognising it as a remarkable act of socio-material translation that required explanation.

Furthermore, my identity as an insider could sometimes close down lines of inquiry. In discussions about the authority of the RC, I might unconsciously avoid probing certain challenges to its legitimacy too aggressively, sensitive to the cultural norm of respecting formal hierarchies. I had to consciously remind myself to apply ANT's principle of agnosticism equally, actively seeking out dissenting voices and alternative problematisations (e.g., the resident who threatened to sue the RC) to ensure that the analysis did not inadvertently reproduce official narratives.

Conversely, my outsider status as a university-affiliated research student, while granting legitimacy in the eyes of the RC, also positioned me within a perceived hierarchy of authority. This occasionally led participants to frame their narratives towards what they

assumed were my, or the university's, expectations, a form of social desirability bias (Bryman, 2016). For instance, RC staff might justify their actions with more reference to official policy documents during interviews, while later, in more informal settings, expressing greater doubt and frustration.

My physical presence in the community during key phases of the pandemic (as outlined in Section 4.3.3) further enrolled me in the actor-network. Merely being present at the community gate during morning rush hour, observing temperature checks, or participating in WeChat groups meant that me became a witness whose presence could alter behaviours. Security guards might perform their duties more meticulously; RC staff might justify their actions more explicitly; residents might voice criticisms more cautiously or, conversely, more vehemently to an audience perceived as potentially influential. I was therefore another node in the socio-material assemblage, affecting the flow of information and the performance of accountability (Latour, 2005).

*Operationalising Reflexivity: Strategies for Tracing the Researcher's Mediation*

Recognising this entangled position, several strategies were employed to practice reflexivity as an ongoing methodological process, aligning with ANT's principle of making the research process itself an object of inquiry.

(1) The Research Diary as an Inscription Device: A detailed reflexive diary was maintained throughout the fieldwork period. This diary served as a crucial tool for "documenting the documentation process" (Law, 2004). It went beyond recording events to capturing my emotional responses, ethical dilemmas, preconceptions, and reactions to participants' stories. For example, entries documented initial surprise at the rapid emergence of mutual aid networks, frustration during periods of data inaccessibility, and discomfort when witnessing residents challenge exhausted RC staff. Following Alvesson and Sköldberg (2018), these entries were later analysed not as contaminations but as data in themselves, revealing how my affective state influenced which lines of inquiry were pursued, which actors seemed more significant, and how controversies were interpreted. When analysing the "False Red Code" incident (Chapter 6), the diary revealed a initial tendency to sympathise with residents' anger; this awareness prompted a deliberate return to the principle of symmetry, pushing the analysis to also ask what the malfunctioning

algorithm and the overwhelmed RC staff were "doing" in that situation.

(2) Positionality Statements in Interview and Observational Protocols: Before each interview or observation session, I explicitly stated my role and purpose: a doctoral student researching "how communities work together during difficult times." This was designed to manage expectations and mitigate the "official" aura of a university research student. The verbal consent process (see Section 4.4.2) included phrases like, "I am here to learn from your experience," which aimed to position me as a learner rather than an evaluator. However, reflexivity involved acknowledging the inherent power imbalance that remained. In post-interview notes, I recorded how my own identity seemed to shape the interaction. For instance, whether an RC staff member was more defensive or a resident was more candid when speaking to a "student" versus a perceived "official".

(3) Reflecting on the Production of Data: ANT's principle of free association meant following actors into unexpected domains, including the digital realm of WeChat. Reflexivity here involved constant awareness of how my presence in these groups altered their dynamics. Was a debate cut short because of my presence? Were certain images or messages shared performatively, for my benefit? I documented these potential effects.

*The Researcher's Role in Actor-Network Reassembly*

My role as an actant became most visible during the later phases of the pandemic ("Policy Softening" and "Re-translation," see Chapter 6). As trust in official systems waned, me, by virtue of my sustained presence and perceived neutrality, was occasionally enrolled as a mediator or resource. For instance, when elderly residents struggled with health code renewals, they sometimes approached me for help before contacting the RC. In one instance, I assisted an elderly resident in navigating the health app interface. This action, while ethically motivated (aligned with the principle of minimising harm), also meant myself temporarily became part of the "solution" to a technological failure. This was recorded in the research diary and analysed as an empirical example of how actor-networks reassemble through improvised.

## 4.5 ANT as a Research Strategy: Guiding Principles for Tracing

## Socio-Material Networks

ANT is not a procedural methodology in the conventional sense. It does not provide a fixed set of steps or techniques for data collection or analysis. Instead, it operates as a research strategy or sensitising framework that orients the researcher toward a particular way of seeing, questioning, and interpreting the social world (Latour, 2005; Law, 2004). This section elaborates on how ANT's ontological and epistemological commitments, were operationalised in this study to trace the dynamic processes of accountability network during the COVID-19 pandemic. It also explicates how these principles guided data analysis, enabling a nuanced understanding of accountability as a performative effect of socio-material relations.

### 4.5.1 ANT as a Sensitising Framework

Traditional social science methodologies often seek to standardise procedures to ensure reliability and replicability. In contrast, ANT rejects the notion of a predetermined methodological "recipe" (Law, 2004). It does not prescribe specific tools or techniques but offers a set of orienting principles that inform how research is designed, conducted, and interpreted. As Law (2004, p. 45) argues, ANT is less a "theory of the social" and more a "methodology for tracing associations." This aligns with Latour's (2005, p. 12) insistence that the researcher must "follow the actors themselves," allowing the research process to emerge from the empirical realities of the field rather than imposing pre-existing categories or hypotheses.

In this study, ANT functioned as a sensitising framework (Blumer, 2017) that shaped every stage of the research process: from site selection and data collection to analysis and interpretation. It encouraged a stance of openness, flexibility, and responsiveness to the contingencies and complexities of the pandemic governance network. This approach was particularly apt for studying a phenomenon characterised by rapid change, controversy, and the entanglement of human and non-human actors (Callon, 1986; Latour, 2005).

### 4.5.2 Operationalising ANT's Core Principles

*Agnosticism: Suspending A Priori Categories*

ANT's principle of agnosticism requires the researcher to suspend all preconceived notions about which actors are important, what their interests are, or how they are motivated

(Callon, 1986; Latour, 1987). This meant entering the field without assuming that the RC was the most powerful actor, that residents were a homogeneous group, or that technologies like health codes were merely passive tools. Instead, the research sought to discover the actors through the controversies they provoked and the traces they left in the actor-network (Venturini, 2010).

This principle was put into practice through open-ended interview protocols that began not with hypotheses but with invitations for participants to narrate their experiences. Questions such as "Who else was important in making things happen during the pandemic?" or "Were there any specific tools or objects that became especially important?" were designed to let the actors themselves define the actor-network's relevant constituents. Ethnographic observations were similarly guided by this principle. Rather than pre-selecting sites based on theoretical importance, the research focused on arenas where controversies were most visible (e.g., community gates where health codes were contested, RC offices where policies were interpreted, and WeChat groups where rumours and official announcements collided).

Also, this agnostic stance allowed the study to remain open to unexpected actants, such as a specific policy document that became a weapon in a local dispute or a malfunctioning thermometer that reconfigured relations between residents and enforcers. By refusing to grant explanatory privilege to any entity at the outset, the research could trace how actors themselves, in the course of their interactions, defined the situation, established their identities and interests, and built alliances.

*Generalised Symmetry: Granting Agency to Non-Humans*

ANT's principle of generalised symmetry mandates that the analyst explain the outcomes of actor-network building using the same conceptual framework for both human and non-human actors (Callon, 1986; Latour, 1993). This means treating non-humans not as passive intermediaries but as active mediators that transform the actions, meanings, and relations they carry (Latour, 2005).

Consequently, the study did not treat the health code system as a neutral background, but investigated how its algorithmic logic (the generation of a red, yellow, or green status)

compelled specific actions from security guards, triggered emotional responses from residents, and legitimised certain forms of authority while undermining others. Interview questions were deliberately phrased to probe this hybrid agency, asking participants to describe not just what people did, but what technologies made them do. Observations documented the interactions between humans and non-humans: how a quarantine seal on a door not only restricted movement but also transformed social relations, making the resident inside a subject of collective scrutiny and the RC staff an executor of algorithmic will.

Furthermore, the analysis of documents and inscriptions, from municipal policy PDFs to handwritten health logs, treated these not as passive records but as active mediators that enabled action at a distance. A policy text, for instance, would be analysed for how it was cited, misinterpreted, or mobilised by different actors to justify their actions, thus exercising a form of non-human agency within the actor-network. By applying this symmetric lens, the study avoided the pitfalls of technological determinism and social constructivism, instead revealing how accountability was a co-production, an effect generated through the interplay of human intentions and non-human affordances and constraints.

*Free Association: Following Actors Across Boundaries*

ANT advocates methodological free association, following actors wherever they lead, without imposing predefined boundaries on the actor-network (Latour, 2005). This principle recognises that actor-networks are fluid, emergent, and often surprising in their composition and extent.

In this study, free association was operationalised through multiple methods. Firstly, snowball sampling was not merely a technique for recruiting participants but a method for tracing the associations that constituted the actor-network itself: a referral from an RC staff member to a key volunteer was a trace of a successful moment of enrolment. Also, the research moved across physical and digital spaces: from observing the materiality of a temperature checkpoint at the community gate to analysing the digital discourse within a WeChat group where a policy controversy unfolded. Thirdly, the phase-based design was essential here, as it allowed the research to follow the actor-network's evolution over time,

tracing how associations formed, held firm, or dissolved as the pandemic moved from crisis to stabilisation to fragmentation.

Free association ensured that the study could capture how a municipal policy made its way into a local argument, how a relative abroad influencing a resident's perception of risk, or how a broken scanner led to the improvisation of a paper-based system. The actor-network's boundaries were thus defined not by the researcher's initial design but by the actors' own associations, revealing the distributed and relational nature of responsibility and accountability.

### 4.5.3 ANT as a Guide to Data Analysis

ANT not only informed data collection but also provided a framework for data analysis. Moving beyond categorical or variable-based approaches, ANT-informed analysis is a process of tracing associations, mapping controversies, and following the processes of translation through which actor-networks form, stabilise, and transform (Latour, 2005). This study's analysis was not a distinct phase that began after data collection, but an iterative, emergent practice that occurred in the same time with fieldwork. The objective is to specifically describe the performative processes through which accountability was enacted. This section details the specific analytical strategies employed, grounded in ANT's core tenets and operationalised through a constant movement between empirical data and theoretical concepts.

*Tracing Translation Process*

The analytical process was guided by a central question: how is the actor-network assembled and made to hold? To answer this, the study drew heavily on Callon's (1986) four moments of translation.

The first, problematisation, involved analysing how the "problem" of pandemic accountability was initially framed and by whom. This meant scrutinizing early interview transcripts, policy documents, and WeChat records to identify the key actors who sought to establish themselves as an OPP. For instance, the analysis focused on how the "containment imperative" emerged as a non-negotiable problem, positioning the RC and its

associated technologies (health codes, quarantine seals) as indispensable solutions. The goal was to trace the construction of this OPP, identifying which actors were included in the initial problematisation and which were excluded, and how the vdefinition of the problem (e.g., as a biosecurity threat vs. a social crisis) was contested (Callon, 1986; Law, 1992).

The second moment, interessement, required analysing the devices and strategies used to lock actors into the roles proposed during problematisation. Here, the analysis focused on the multitude of human and non-human actors that functioned as interessement devices. This involved examining how health codes, through their integration into daily routines and physical checkpoints, actively shaped behaviour and dissuaded associations with alternative actor-networks (e.g., resisting quarantine). Similarly, moral narratives around "protecting the homeland" and "family duty," circulating in WeChat groups and official posters, were analysed not just as discourse, but as active forces in aligning interests. The analysis sought to identify where interessement succeeded, failed, or was subverted. For example, when residents began using handwritten health logs to bypass malfunctioning health codes, it was analysed as a moment of failed interessement, where the non-human actor (the official code) lost its power to lock actors in, leading to a renegotiation of the actor-network's boundaries.

Enrolment, the third moment, is the point where actors accept the roles defined for them. Analytical focus here was on the negotiations, trials of strength, and compromises that characterized this acceptance. This was not a simple binary of compliance/non-compliance, but a series of partial, contingent, and often contested enrolments. Transcripts from interviews with RC staff, volunteers, and residents were coded for narratives of negotiation: how roles were debated, adapted, and ultimately stabilised or rejected. The materialisation of roles was also crucial: the analysis documented how the "Big White" volunteer identity became stabilised through the material presence of protective suits and official IDs, and how the resident's identity became entangled with the perpetual performance of "green code" maintenance. Enrolment was thus analysed as a sociomaterial achievement, where identities were co-constructed through interactions with policies, technologies, and other actors (Callon, 1986; Latour, 1987).

Finally, mobilisation concerned the processes through which certain actors become

accepted as legitimate spokespersons for the entire actor-network. The analysis tracked how the RC, data dashboards, and official policy documents were mobilised to represent the actor-network's reality and will. This involved analysing how these spokespersons gained their authority and how that authority was challenged. For instance, the community data dashboard was analysed not as a passive reflection of reality, but as an active spokesperson that shaped perceptions of risk, justified resource allocation, and lent an air of scientific objectivity to RC decisions (Latour, 1990). Its subsequent failure, freezing and becoming outdated, was a key analytical event, as it represented a crisis of mobilisation that triggered a search for new spokespersons (e.g., grassroots symptom maps). The concept of the OPP was important in this analysis, used to trace the shifts in power and control. The study mapped how the OPP moved from the algorithmic authority of the health code to the relational authority of building representatives and mutual-aid networks, as the formal actor-network fragmented, demonstrating the contingent nature of power within actor-networks (Callon, 1986; Heeks and Stanforth, 2007).

*Complementary Techniques*

Within this overarching ANT framework, thematic analysis (Braun and Clarke, 2006) and discourse analysis (Fairclough, 1992) served as complementary techniques to identify patterns and meanings across the dataset, while remaining attentive to the materiality and agency of non-human actors. Thematic analysis was employed to code and categorise recurring patterns of meaning related to the experience and performance of accountability. Codes such as "trust in technology," "procedural fairness," "collective duty," and "moral distress" emerged inductively from the data. However, in line with ANT's principles, these themes were not treated as disembodied ideas or mere perceptions of human actors. Instead, each theme was analysed relationally, exploring how it was produced and sustained through specific sociomaterial arrangements. For example, the theme of "moral distress" was not just a psychological state reported by RC staff, it was traced to its sources in the misalignment between rigid algorithmic systems (non-human actors) and situated ethical dilemmas, showing how affect is co-constituted within the actor-network.

Discourse analysis, particularly in the tradition of critical discourse analysis, was integrated to examine how language and symbolic practices were used to construct, maintain, and challenge power relations within the actor-network. This involved analysing the linguistic strategies in policy documents, public announcements, and WeChat debates.

For instance, the repeated official discourse of "precision prevention" (精准防控) was examined as a linguistic device that attempted to frame top-down interventions as scientific and apolitical. Conversely, resident counter-narratives found in WeChat voice messages, such as accusing the RC of "inventing their own laws" (自己发明法律), were analysed as discursive resistance that undermined the authority of official spokespersons. Crucially, this discourse analysis was symmetrically applied. The "discourse" of non-human actors was also considered: the visual discourse of the tricolour health code interface, the auditory discourse of a quarantine seal alarm, or the numerical discourse of a data dashboard were all analysed as active semiotic practices that shaped reality alongside human language (Introna, 2011). This approach prevented the analysis from falling into a language-centric trap, instead situating discourse as one type of force among many (material, technological, affective) that circulate within the actor-network.

*Operationalising the Analysis: An Iterative Process*

While ANT resists rigid proceduralisation, the analysis followed an iterative process of moving between empirical data and theoretical concepts. This process is summarized in the table below, which outlines the key analytical actions and their objectives. It is crucial to note that these were not linear steps but interconnected practices that informed one another throughout the research process:

| Analytical Actions | Description |
|---|---|
| Data Immersion & Narrative Reconstruction | Translating and transcribing interviews/field notes; creating chronological narratives of key events |
| Identifying Actants & Preliminary Coding | Open coding for all human and non-human actors (e.g., 'RC staff', 'health code'); noting their associations. |
| Mapping Controversies | Focusing on points of conflict, disagreement, or breakdown; mapping competing problematisations and their resolutions. |
| Thematic Clustering | Grouping codes into broader themes (e.g., 'trust', 'care') using thematic analysis |
| Analysing via the Four Moments | Using Callon's (1986) moments as a lens for key events: How was the problem defined (OPP)? What devices locked actors in? How were roles accepted? Who spoke for the actor-network? |
| Following Inscriptions | Analysing how specific inscriptions (e.g., a health code, a policy PDF) shaped actions and relationships. Asking: What did this inscription do? |
| Synthesis & Writing up | Weaving together themes, translation moments, and inscriptions to construct argument about the assembly of the accountability network. |

Table 4-6: Iterative Process of ANT-Informed Data Analysis

The analysis began with deep immersion in the raw data—transcripts from semi-structured interviews, field notes from ethnographic observations, digital traces from WeChat groups, and collected inscriptions (policy documents, health code screenshots, quarantine seals). This involved transcription, translation the construction of chronological narratives of key events (e.g., the initial lockdown, the introduction of health codes, the "False Red Code" incident). These narratives helped reconstruct the trajectory of the actor-network over time, providing a temporal backbone for understanding how associations formed, held, and broke.

Subsequently, using open coding, the study identified all human and non-human actors (actants) that played a role in the actor-network. This included obvious actors like RC staff, residents, health codes, and subtle actants such as policy PDFs, data dashboards, quarantine seals, and even affective forces like "trust" or "fear." Each was coded inductively, and their associations were noted (e.g., "health code - mandates action from guard," "RC staff - interprets policy document"). This step operationalised ANT's principle

of generalised symmetry by treating human and non-human actors with equal analytical seriousness.

Following ANT's emphasis on controversies as revelatory moments, the analysis then focused on points of conflict, disagreement, or breakdown. For example, the "False Red Code" incident (Chapter 6) was mapped by identifying all actors involved—residents, RC staff, the algorithm, the municipal database—and tracing how each defined the problem differently. Competing problematisations were identified (e.g., "algorithmic error" vs. "human negligence"), and their resolutions (or lack thereof) were analysed to reveal the actor-network's fragile connections and power dynamics.

In the next stage, using thematic analysis, codes were grouped into broader themes such as "trust," "care," "resistance," and "moral distress." However, in line with ANT, each theme was analysed relationally—exploring how it was produced and sustained through specific sociomaterial arrangements. For instance, "trust" was not merely a psychological state, it was traced to its enactment through material practices like the use of paper-based health logs or the ritual of temperature checks.

Callon's (1986) four moments were then used as analytical lenses to structure the understanding of key events. For example, the introduction of health codes was analysed as a moment of interessement, where the technology attempted to "lock in" residents and enforcers into specific roles. Similarly, the breakdown of the data dashboard (Chapter 6) was analysed as a failure of mobilisation, where a key spokesperson lost legitimacy, triggering a search for alternatives (e.g., grassroots symptom maps).

Also, specific inscriptions were analysed—such as a health code interface, a policy document, or a handwritten log—shaped actions and relationships. For each inscription, questions were asked: What did it do? How did it enable or constrain action? For example, the health code was analysed not as a passive representation of risk, but as an active force that compelled behaviour, triggered emotions, and sometimes failed, thereby revealing the actor-network's dependencies and vulnerabilities.

The final step involved weaving together the themes, translation moments, and inscriptions

to construct argument about the assembly, stabilisation, and reassembly of the accountability network. This was a synthesis, showing how the network was performatively enacted through the continuous and contested negotiations of heterogeneous actors.

## 4.6 Conclusion

The methodological strategies elaborated in this chapter are expressions of ANT's core principles. These principles guided every stage of the research, from the initial identification of actors to the iterative analysis of translation processes. This chapter establishes a methodological foundation for the empirical analysis that follows in Chapters 5 and 6. It demonstrates how ANT operates not only as a theoretical lens but as a research strategy, one that is equipped to look at the complexity, fluidity, and materiality of pandemic governance. By remaining faithful to the principle of following the actors, this study aims to produce a contextualised account of how accountability was woven, unmade, and rewoven within the everyday practices of the community in crisis.

# Chapter 5: Constructing Control – The Early Assemblage of Pandemic Accountability

## 5.1 Introduction

As outlined in Chapter 3, ANT provides a powerful lens for conceptualising accountability not as a pre-existing structure but as an emergent effect of networked relations between heterogeneous actors (Latour, 2005; Law, 1992). This chapter operationalises that framework, drawing on the qualitative data collected via the methods described in Chapter 4, to answer the central research question: How is accountability enacted and distributed through socio-material networks during COVID-19? The analysis specifically focuses on the early phase of the pandemic, examining the processes through which a previously fragmented socio-technical order was reconfigured into a provisional yet functional governance assemblage.

Central to this inquiry is tracing the network's morphogenesis using Callon's (1986) sociology of translation. The chapter examines the four moments of translation: from the initial problematisation where viral containment emerged as an obligatory passage point (OPP), through the interessement mechanisms that bound actors to prescribed roles, to the enrolment of human and non-human actors into stabilised positions, and finally the mobilisation of spokespersons to represent the actor-network. Crucially, in line with the ANT framework detailed in Chapter 3, the category of "non-human actors" is understood here to encompass the critical algorithmic, digital, and infrastructural elements—such as health code algorithms, WeChat platforms, quarantine seals, and policy documents, that actively participated in shaping accountability relations (Latour, 1992; Orlikowski, 2007).

Following ANT, these actors are ‘inscriptions’—material carriers of rules (Akrich, 1992). They created a dual system of accountability: one was a tangible surveillance network (e.g., using codes to control movement), and the other was a symbolic framework that reshaped people’s understanding of their responsibilities during the crisis (e.g., linking a green code to being a ‘good citizen’). Relatedly, residents and officials were cast into two intertwined

roles: (1) biological entities whose health status needed to be constantly visible and monitored, and (2) moral agents judged by their compliance with new rules governing movement and contact under lockdown. In this vein, the form of accountability was not simply imposed from above; it was a contested accomplishment, built through the everyday negotiations and alignments.

The chapter is structured to follow the translation process. Section 5.2 begins by tracing the problematisation phase, examining how the crisis ruptured pre-existing structures and forged new OPPs. Section 5.3 analyses the interessement mechanisms that bound actors to emergent roles. Section 5.4 details the enrolment phase, where roles were formalised and institutionalised. Finally, Section 5.5 examines mobilisation, completing the translation cycle by analysing the stabilisation of spokespersons and the ongoing contestation of representations within assemblage. Through this structure, the chapter demonstrates how the theoretical propositions of Chapter 3—regarding the performative, socio-material nature of accountability—were realised in the empirical context.

## 5.2 Emergence of actor-networks in response to the virus - Problematisation

This section examines how a non-specialised urban community, situated outside epidemic epicenters, dynamically reconfigured its governance structures during the COVID-19 pandemic through the lens of Actor-Network Theory (ANT). By tracing the evolution of socio-technical networks from pre-crisis fragmentation (pre-January 2020) to provisional stabilisation, the analysis reveals how human and non-human actors negotiated crisis responses amid chaos, contestation, and structural improvisation. The section is structured into phases: (1) the pre-pandemic fragmentation of governance systems, detailing disconnected socio-technical infrastructures; (2) the rupture and role redefinition during problematisation, examining contested interpretations of risk and authority; (3) the emergence of an obligatory passage point (OPP) around viral containment, analysing how collective crisis became a non-negotiable imperative; and (4) the tentative stabilisation of a problematised actor-network, where actors provisionally aligned despite unresolved tensions.

### 5.2.1 Pre-Crisis Fragmentation (Pre-January 2020)

Prior to COVID-19's emergence, governance of the community operated through a fragmented socio-technical system. Residents Committee (RC) functioned primarily as bureaucratic intermediaries for census management and welfare distribution, while digital surveillance infrastructures remained siloed from community operations. This structural disconnection between human actors (RC staffs, residents, health inspectors) and non-human actors (health logs, community WeChat-based communication) created latency in emergency response capabilities:

> “We have little in the way of daily health testing, ... there was no need for this before the pandemic broke out either... Things like infrared thermometers were only available if you went to the hospital, which we didn't have here. For a long time this was not part of our job description... We did set up a WeChat group for the community a long time ago, which consisted mainly of property staffs and some property-owners' representatives, but basically no one talked in the group, occasionally we made some simple announcements.”
>
> (RC staff 1)

RC staffs have a simplistic definition of their work and see themselves as mere messengers of governmental announcements. Similarly, the majority of community residents are only “aware” of the existence of RCs, but have little knowledge of their functions and uses:

> "No one in my family spoke to the RC staffs before the outbreak. My husband seems to be in one of their group chats, but I haven't heard him talking about it before... It seems like they can help to regulate family conflicts, but I haven't heard around that any neighbours I know have specifically sought help from the committee."
>
> (Resident from familly 2, member1. Resident F2M1 hereafter)

The pre-pandemic governance structure within the community exemplified fragmented

interdependencies. RC staffs predominantly positioned themselves as passive conduits for top-down information dissemination rather than proactive agents of community engagement. Digital infrastructures, such as WeChat groups, remained under utilised as static platforms for one-way announcements, failing to foster residents' engagement and coordination. This disconnection between human actors and non-human actors underscored a systemic lack of cross-functional integration. Moreover, health surveillance mechanisms were absent, with basic tools like infrared thermometers confined to external medical institutions, further exposing the community's unpreparedness for potential health crises. Such structural silos presented a reactive, rather than adaptive, governance paradigm. Subsequently, the pandemic's initial onslaught exposed critical vulnerabilities within this adaptive paragidm. This transitional phase manifested acute systemic disarray, wherein the RC's decentralised operational protocols and community's pre-existing interdependencies became fundamentally strained. These stresses precipitated the importance for emergent socio-technical networks capable of reconstituting pandemic governance.

This fragmented system, however, was about to face an unprecedented test. The arrival of COVID-19 ruptured it, forcing a chaotic yet generative redefinition of problems, roles, and relationships. The gaps and disconnections that characterised the pre-crisis period now became sites of contestation and negotiation, marking the onset of the problematisation phase.

### 5.2.2 Problematisation: Chaos and Actors Redefinition

The onset of COVID-19 in early 2020 ruptured the fragmented socio-technical order of the community, triggering a chaotic phase marked by contested interpretations of risk, contested roles, and contested infrastructures. As the virus breached geographic and institutional boundaries, the community's pre-existing governance structures—designed for bureaucratic routine rather than crisis—collapsed under the weight of competing imperatives: epidemiological containment, resident safety, and institutional legitimacy. This period exemplifies the problematisation phase of actor-network formation, where heterogeneous actors began to articulate shared anxieties, redefine their relational positions, and negotiate the boundaries of what constituted a "problem" requiring collective action.

*Chaos and Contested Definitions*

Initial chaos stemmed from the absence of a unified epistemic framework to interpret the crisis. Residents, RC staff, and external authorities operated with conflicting understandings of viral transmission, risk thresholds, and institutional responsibilities.

The absence of shared knowledge frameworks for interpreting viral risks led to competing truth claims. While municipal authorities disseminated standardised guidelines on mask usage and quarantine protocols via official WeChat channels, residents simultaneously encountered contradictory narratives through private chats and transnational social media. A resident described this dissonance:

> "One day the RC would post, ‘Masks are unnecessary for healthy people,’ then the next day, my cousin in Italy sent me a video of bodies in trucks, begging me to stockpile N95s. Who do we trust—the government or our own families?”.
>
> (Resident F3M1)

Such epistemic clashes transformed the WeChat group from a dormant announcement board into a battleground of "experimental knowledge," where homemade disinfection techniques (e.g., steaming masks) circulated alongside state-sanctioned directives. Simultaneously, the RC, previously a passive intermediary, faced contradictory mandates: to enforce lockdowns decreed by municipal authorities while lacking the technical or social infrastructure to implement them.

> “When the lockdown started, we were told to check everyone’s temperature at the gates, but we had no equipment. Some staff brought their own forehead thermometers bought online, but they were unreliable. People argued—how do we know who’s sick?... Do we trust these devices? Do we trust each other?”
>
> (RC Staff 3)

Material gaps in the community's health surveillance infrastructure became glaring. The lack of thermometers forced RC staff to rely on performative rituals of crisis management, such as manually recording residents' self-reported temperatures in paper ledgers. These incomplete data sets, however, failed to satisfy municipal inspectors demanding digital submissions, creating recursive tensions in the digital accountability system.

Meanwhile, pre-crisis role definitions collapsed under contradictory demands. RC staff, previously confined to welfare distribution, were abruptly tasked with enforcing lockdowns without legal authority or protective gear. A staff member recalled being trapped between residents' desperation and institutional indifference:

> "People screamed at us to reopen the gates, but the district office just said, 'Follow orders.' We had no training for this—were we police, nurses, or errand boys?"
>
> (RC Staff 2)

Here, the RC became a critical actor in defining the scope of the crisis. While nominally the lowest rung of state administration, the RC staffs actively problematised the government's initial abstract directives of "strict control" by juxtaposing them against the material reality of the community. Their experience articulated a specific "problem" to the municipal authorities: that political mandate without material enforcement capacity (e.g., personal protective equipment, gates, authority) would lead to governance failure. By framing the lack of resources as a threat to the municipality's own goal of stability, the RC attempted to force an alignment of interests, effectively demanding that the state provide legitimacy and tools in exchange for the RC's labour. They were the gatekeepers negotiating the terms of their own mobilisation.

The previously dormant WeChat group erupted into a forum of rumours, appeals, and distrust. Residents contested the RC's authority to impose restrictions, while the RC struggled to reconcile top-down directives with grassroots realities. A resident recounted:

> "Suddenly, the WeChat group was flooded with messages—news about outbreaks in other cities, people sharing homemade masks, others accusing the

> RC of hiding infection numbers. The committee kept posting official notices, but no one believed them. It felt like everyone was shouting, but no one was listening."
>
> (Resident F2M2)

Residents vacillated between defiance and dependency, as seen in a viral WeChat voice message where a homeowner threatened to sue the RC for "illegal detention" while simultaneously demanding urgent delivery of his online grocery order. It should be noted that while this study did not conduct in-person fieldwork during this initial phase, the wealth of real-time digital traces—such as voice messages, screenshots, and shared images captured within WeChat groups, provides a window into the intense affective and moral ambiguities that characterised this period.

*Non-Human Actors as Problematising Forces*

Non-human actors played pivotal roles in destabilising pre-crisis structure and forcing redefinitions of "the problem." Municipal lockdown policies, transmitted as digital documents via government portals; materialised as physical barriers—makeshift fences at community gates—that reconfigured spatial practices and intensified tensions. These policies, however, were incomplete boundary objects (Star and Griesemer, 1989). The concept of "boundary object" refers to artifacts or concepts that are shared across different social groups but are flexible enough to be interpreted differently within each local context (Star and Griesemer, 1989). In this case, their ambiguous wording sparked disputes over compliance. For instance, the phrase "non-essential travel prohibited" provoked endless interpretations: Was walking a dog "essential"? Could divorced parents share child custody across locked gates?

Similarly, the sudden visibility of viral risk—an abstract, non-human entity—reshaped social interactions. Residents began interpreting mundane acts (e.g., elevator button-pressing, parcel deliveries) as potential threats, thereby problematising previously invisible infrastructures.

The WeChat platform itself emerged as a contested mediator. Its technical features, e.g.,

message persistence, group size limits, screenshot sharing, amplified both solidarity and paranoia. For instance, a resident's grainy screenshot of a disputed fever case in a neighbouring community circulated virally, morphing into "evidence" of institutional failure. Yet the same platform enabled RC staff to crowdsource personal protective equipment (PPE) donations, legitimising their role as crisis coordinators.

*Redefining Roles and Obligations*

Problematisation necessitated renegotiations of agency (Callon, 1986). The RC, no longer a mere bureaucratic relay, was compelled to assume hybrid roles: enforcer (gate controls), caregiver (groceries for quarantined households), and data curator (health code verification). These shifts were neither linear nor consensual. As one RC member noted:

> "Overnight, we became 'virus fighters,' but without training or tools. Residents blamed us for either doing too much 'restrictions' or too little 'food shortages'. We didn't even know our own authority—were we allowed to detain someone with a fever?"
>
> (RC Staff 2)

At the same time, residents redicovered their identities. Some adopted monitoring of neighbours' movements, while others formed mutual aid networks, bypassing the RC entirely. They coordinated grocery deliveries, childcare, and information sharing through private chats or new, self-organised WeChat groups. These emergent collectives contested the RC's claim to represent the "general interest," reframing governance as a potential multi-centric struggle.

### 5.2.3 Problematising the Obligatory Passage Point: Viral Containment as a Non-Negotiable Imperative

The chaotic emergence of COVID-19 forced the community to confront a foundational question in ANT: How do heterogeneous actors—human and non-human—align around a shared problem? Here, Callon's concept of the obligatory passage point (OPP) becomes pivotal. As Callon (1986) argues, an OPP is a socio-material construct that actors must

negotiate to establish their legitimacy within a actor-network. In this community, the crisis reframed the OPP as "the imperative to collectively contain and govern the pandemic"—a contested but unavoidable focal point. All actors, willingly or not, had to channel the OPP. Latour's notion of translation, the process by which actors redefine problems and interests (Latour, 2005)—demonstrates how this OPP emerged not as a determined goal but through negotiations, where human anxieties, viral agency, and infrastructural limitations collided.

Initially, competing problematisations clashed: municipal authorities framed COVID-19 as a biosecurity threat requiring lockdowns, issuing directives that emphasised "病毒歼灭战" ("virus eradication warfare"); residents, particularly small business owners, interpreted it as a social rupture destabilising livelihoods, asking in WeChat groups, "封城了，贷款怎么还？" ("The city is locked down, how do we repay loans?"); while the virus itself, as a non-human actant, defied fixed categorisations through mutating transmission patterns.

The OPP of "collective containment" thus produced precisely because no actor could bypass the crisis—survival necessitated engagement. As Latour (2005) emphasises, such passage points arise when actors recognise their fates are entangled, even if their goals diverge.

Critical to this process was the material enforcement of the OPP. Lockdown policies, transmitted as digital decrees, materialised as physical barrier at community gates. These barriers—wooden planks nailed together—became both symbols and instruments of containment. A resident's sarcastic remark captured this duality:

> "Those planks were flimsy, but they felt like a fortress. The RC kept pointing to them, saying, 'See? We're containing the virus!' But we all knew the real walls were the health codes on our phones."
>
> (Resident F5M1)

Specifically, the OPP's formation hinged on two dynamics:

- Human Resistance and Compliance

Small business owners initially rejected the OPP, framing lockdowns as economic crisis. However, the escalating crisis gradually compelled alignment. A restaurant owner said:

> "I hated the lockdown, but when my friend's uncle died, I stopped protesting. The virus became this… thing we all had to answer to, even if it ruined us."
>
> (Resident F7M1)

• Non-Human Actors Enforcing the OPP

Non-human actants played roles in stabilising the OPP. The municipal health code, a QR-based system linking personal identity to infection risk, became a gatekeeper. Its algorithmic logic—green (safe), yellow (suspected), red (confirmed)—reduced complex realities to binary permissions. Yet its authority derived not from code alone but from its hybrid integration with human practices, such as the green code check at the community gate.

Callon's problematisation moment thus unfolded here: the OPP of "collective containment" became unavoidable, as the material consequences of COVID-19 overrode individual and collective dissent. Initially, resistance to lockdowns was vocal, particularly among small business owners and daily wage earners who faced immediate economic collapse. However, the escalating visibility of the virus's effects—local infections, overwhelmed hospitals, and the circulation of images of infection maps online—made abstract risks tangibly present. At the same time, institutional penalties for non-compliance, such as public shaming, or forced quarantine, raised the cost of resistance. As Latour (2005, p. 107) notes, an OPP stabilises when dissent becomes "too costly, materially or morally, to sustain." In this case, the biological agency of the virus, amplified by statistical reports and barriers, combined with the disciplinary force of policy enforcement to realign actors' calculations. Residents who had initially rejected the RC's authority gradually accepted, not out of consensus, but because the consequences of ignoring the OPP—whether biological infection or policy's sanction—became inescapable. Thus, the problematisation was a material one: the virus and the anti-virus measures together produced a new reality in which bypassing containment was no longer a option (Callon, 1986; Mol, 1999).

### 5.2.4 Toward a Provisional Problematisation

By March 2020, the community had tentatively stabilised a problematised actor-network:

COVID-19 was collectively recognised as a threat requiring intervention, albeit with unresolved tensions over how, by whom, and through what means. The crisis had rendered visible previously dormant actors (e.g., digital platforms, policy documents) and forced their enrolment into a governance assemblage. However, this phase remained fluid, characterised by competing problematisations—was the core issue biosecurity, social order, or resource equity?—that would lead to later interessement and enrolment. This stage underscores ANT's premise that problematisation is not merely cognitive but materially enacted. The chaos of early 2020 was not a failure of governance but a generative turbulence, where human and non-human actors collided, testing alliances and redefining what it meant to "govern" a community under a public emergency.

## 5.3 Stabilising the Actor-Network: Interessment Mechanisms and Role Binding

Building on the chaotic problematisation phase outlined in Section 5.2, this section examines how the emergent actor-network transitioned toward provisional stability through interessment—a critical moment in Actor-Network Theory (ANT) where actors are persuaded, coerced, or incentivized to accept their roles within the actor-network (Callon, 1986). Interessment mechanisms operate as sociotechnical "locks" that bind actors to the actor-network by aligning their interests with the actor-network's objectives, thereby reducing defection and fostering cooperation (Callon, 1986). During the early pandemic, this phase unfolded through three interrelated processes: (1) the deployment of material-discursive devices (e.g., health codes, quarantine protocols) to enforce compliance; (2) the reconfiguration of social norms to legitimise surveillance; and (3) the negotiation of hybrid agency between human and non-human actors. Drawing on ethnographic data, this section traces how these mechanisms solidified the community's pandemic governance assemblage.

### 5.3.1 Material-Discursive Devices: Enforcing Compliance Through Hybrid Infrastructures

Interessment relies heavily on the creation of obligatory instruments—tools, policies, or

protocols that actors cannot circumvent without facing material or symbolic consequences (Latour 2005). In this community, the municipal health code system (hereafter "health code") emerged as the cornerstone of such enforcement. Introduced in late February 2020, the health code algorithm assigned residents a tricolour risk status (green = safe, yellow = quarantine required, red = confirmed infection) based on travel history, contact tracing, and nucleic acid test results. While framed as a neutral "public health tool," its design and implementation reveal how interessement operates through hybrid coercion.

*Algorithmic Authority*

The health code's authority derived not from its technical precision but from its integration into daily practices. To enter supermarkets, workplaces, or even their own residential compounds, residents had to display a green code—a requirement enforced by human gatekeepers (RC staff, security personnel) and digital scanners. This interdependency between human and non-human actors created a feedback loop: the codes' legitimacy hinged on human enforcement, while human enforcers derived authority from the codes' algorithmic "objectivity." A resident captured this duality:

> "At first, nobody took the colour codes seriously. But when the guards started turning people away at the gate, even those without fevers, we realised it wasn't optional. The code became our second ID—no green, no freedom."
>
> (Resident F6M2)

RC staffs, previously ambivalent about their roles, were now obligated to act as "code arbiters." One staff member recounted the pressure to comply with the system despite its flaws:

> "The district office sent us scanners linked to the municipal database. If someone's code was red, we had to report them immediately. But sometimes the system glitched...people who hadn't left their homes for weeks turned yellow. We had no choice but to follow protocol."
>
> (RC Staff 4)

Here, again, the health code functioned as a boundary object (Star and Griesemer, 1989), bridging municipal mandates and grassroots realities. For municipal authorities, it served as a standardised metric of risk, enabling centralised surveillance and policy coordination across districts and cities. For frontline enforcers such as RC staff and security guards, it became a toolreducing complex social situations to a binary decision: "green pass, red deny." For residents, however, the same code represented a material constraint on mobility, a source of anxiety when its colour changed unexpectedly, and a daily performative act of compliance. The code's discursive framing as "scientific" and "neutral" further naturalized its function, making open dissent appear irrational.

*Quarantine Seals: Materialising Accountability*

Complementing the digital code, physical "quarantine seals" affixed to apartment doors of suspected cases materialised the consequences of non-compliance. These magnetic sensors, connected to RC smartphones, triggered alerts if residents breached quarantine. While as a surveillance tool, the seals also served as moral inscriptions (Akrich, 1992), symbolizing the collective duty to contain the virus. A resident under quarantine described the seal's psychological impact:

> "It feels strange to see a black box on the door. Even if I disagreed with the quarantine, removing it would make me a 'public enemy'. My neighbours watched me through their peepholes—seals are not just a technique, they are also a psychological shackle."
>
> (Resident F3M1)

For RC staffs, the seals offloaded moral dilemmas onto non-human actors. As one staff noted:

> "Before the seals, we had to argue with people to stay inside. Now, we just say, 'Blame the sensor, not us'. It's easier when the 'punishment' comes from a machine."

(RC Staff 5)

This delegation of agency to non-human actors reveals a critical dimension of interessement's distributed coercion—a mechanism through which accountability becomes diffused across the network that resistance appears difficult. By attributing gatekeeping authority to the door sensors, the system externalized responsibility: RC staff could deflect residents' frustrations by appealing to the impersonal logic of the algorithm—"I'm not the one stopping you" (RC Staff 4). Similarly, when sensors triggered unjust outcomes, blame could be shifted away from human decision-makers toward technical malfunctions or data inaccuracies.

### 5.3.2 Reconfiguring Social Norms: Cultivating Collective Vigilance and Shared Responsibility

The interessement phase not only relied on material enforcement but also necessitated a reconfiguration of social norms to align individual behaviours with the actor-network's objectives. In this community, the pandemic catalyzed a shift from fragmented individualism to a culture of collective vigilance—a process characterized by the normalisation of shared responsibility and the moral framing of compliance as a civic virtue. Unlike contexts marked by overt conflict, this transition unfolded through collaborative adaptations, reflecting the community's pre-existing social cohesion while introducing new forms of solidarity. Ethnographic data reveal how these norms were negotiated through two interrelated dynamics: (1) the emergence of voluntary mutual support networks, and (2) the discursive reframing of compliance as a communal obligation.

*Voluntary Mutual Support Networks*

Pre-pandemic, residents rarely intervened in neighbours' affairs, their conmmunication limited to occasional exchanges in shared spaces like elevators or community gardens. However, the crisis prompted a reimagining of neighbourly roles. WeChat groups, previously underutilised, became hubs for organising grassroots initiatives that complemented formal RC efforts. For instance, a resident-led "防疫互助群" (Epidemic Prevention Mutual Aid Group) emerged in early March 2020. It was comprised primarily

of younger, tech-savvy residents and stay-at-home parents who mobilised digital tools (e.g., shared online spreadsheets for bulk grocery orders, or “Tuan Gou”) to secure supply chains that the state temporarily failed to maintain, such as grocery deliveries for quarantined households, mask-sharing drives, and peer education on hygiene practices.

> "At first, everyone was scared and didn’t know who to trust. But when Ms. Li in Building 3 started the mutual aid group, it changed. We realised we could help each other. I taught neighbours how to sterilize packages; others shared extra masks. It felt like we were all in this together."
>
> (Resident F4M1, Mutual Aid Group Member)

This organic collaboration reduced reliance on top-down enforcement while fostering trust. RC staff acknowledged the group’s value, integrating its leaders into official communication channels. A staff member noted:

> "The mutual aid group did what we couldn’t—reach residents emotionally. We started sharing their tips in our RC-lead WeChat groups... Feel like there was some unity."
>
> (RC Staff 6)

Crucially, these initiatives were not framed as surveillance but as acts of care. When a quarantined elderly couple struggled to access medicine, the group crowd-sourced prescriptions and delivered them. Such acts of kindness further reinforced the health code system’s legitimacy, as residents associated compliance with protecting vulnerable neighbours.

*Moralizing Compliance: Patriotism and Familial Duty*

The normalisation of collective vigilance was further reinforced through discursive strategies that linked pandemic compliance to deeply held cultural values. Municipal authorities and RC staff deployed narratives emphasising patriotic duty and familial protection, resonating with the community’s collectivist ethos. Official posters declared, "

守护家园，人人有责" (Safeguarding Our Homeland is Everyone's Duty), while WeChat messages featured slogans like "绿码在手，家人无忧" (With a Green Code, Your Family Stays Safe).

These campaigns reframed mundane acts—scanning QR codes, reporting travel histories—as moral imperatives. A resident reflected:

> "My mother kept reminding me, 'Your green code isn't just for you—it's for your grandparents.'It stopped feeling like a chore. It became a way to protect our family's elders."
>
> (Resident F3M3)

This moralization of compliance created a self-reinforcing cycle: public displays of adherence (e.g., posting green codes on WeChat) became markers of social esteem, while non-compliance risked reputational harm. However, unlike punitive shaming, the community emphasised positive reinforcement. RC staff organised "防疫模范家庭" (Model Prevention Families) awards, publicly recognising households that consistently followed protocols and helped the other neighbours.

*Hybrid Governance: Blending Formal and Informal Norms*

The stabilisation of social norms relied on a hybrid governance model that harmonized formal policies with grassroots practices. For example, while health codes enforced digital accountability, RC staff collaborated with mutual aid groups to humanise the process. When a resident's code erroneously turned yellow due to a data error, the mutual aid group advocated for their case, prompting the RC to fast-track a manual review. "The system isn't perfect, but when mistakes happen, we fix them together. That's how we keep trust."(RC Staff 5)

Despite this harmony, tensions occasionally surfaced. Elderly residents, less adept with smartphones, initially struggled with digital tools. Instead of penalizing non-compliance, the RC partnered with volunteers to offer in-person code assistance: "Every morning, I'd visit Auntie Zhang to help her update the code. She'd give me homemade dumplings in return. It became our little ritual." (Resident F1M1)

This section illustrates how the interessement phase in this community was less about coercive alignment than cultivating solidarity. Building on pre-existing social bonds and cultural values, the actor-network transformed pandemic governance into a collective project. Compliance emerged not through top-down imposition but through shared narratives of protection, reciprocity, and moral duty. While material tools like health codes provided technical scaffolding, it was the community's ability to infuse these mechanisms with social meaning that ensured their practical feasibility. However, as subsequent chapters will explore, this fragile balance required continuous negotiation.

### 5.3.3 Negotiating Hybrid Agency: Synergizing Human and Non-Human Actants

The stabilisation of the actor-network during the interessement phase hinged on the integration of human agency and non-human actants, creating hybrid configurations that reinforced compliance while accommodating local realities. Unlike rigid top-down systems, this community's approach emphasised adaptive synergy, where technological tools and human judgment complemented rather than contradicted one another.

#### *WeChat as a Multifunctional Mediator*

The WeChat platform evolved into a dual-channel tool for both enforcement and engagement. Automated annoucements pushed daily health code renewal reminders and policy updates, while human moderators managed a "Community Q&A" thread to address concerns. For example, when residents reported inconsistencies in temperature checkpoint schedules, WeChat groups administrators consolidated feedback and relayed it to the RC, leading to standardised operating hours.

Simultaneously, the platform's "Mini Programs" feature hosted a community-developed "Health Log" interface, allowing residents to self-report symptoms and travel histories. These entries were integrated with municipal databases, creating a feedback loop that improved risk prediction accuracy. A volunteer described the system's adaptability: "At first, the health log was just a form. But when residents started using it to request medicine deliveries, we added a 'needs assessment' section. Now it's a lifeline for many." (Volunteer 3).

*Temporal Flexibility in Compliance Rituals*

The irregular green code checks initially clashed with residents' diverse schedules, particularly for shift workers in this community. To resolve this, the RC introduced staggered checking windows aligned with local routines. Morning checks targeted retirees and parents families, while evening checks catered to office workers. Additionally, community loudspeakers broadcasted gentle nudges during low-conflict hours (e.g., 11:00 AM and 7:00 PM), avoiding sleep disruptions. A nurse working night shifts highlighted the impact of this adjustment:

> "In the past, the RC worker knocking on the door at 7am would make me feel very annoyed, because the hospital was very busy, and I might work until early morning before returning home. Now, the 7 PM checking gives me more time and sleep. It's small, but it shows they understand our lives."
>
> (Resident F8M2)

These examples underscores how the interessement phase thrived on negotiated hybridity, which is a interplay of technological precision and human adaptability. By transforming WeChat into a participatory platform, and tailoring temporal demands to local rhythms, the actor-network achieved stability without sacrificing flexibility. These strategies not only bound actors to their roles but also legitimised the actor-network as a collaborative project, setting the stage for deeper enrolment in subsequent phases.

### 5.3.4 Contested Interessment: Resistance and Adaptation

While the interessement phase aimed to stabilise the actor-network through alignment, it inevitably encountered tensions arising from divergent interests and material constraints. However, in this community, such conflicts were reframed as opportunities for adaptive innovation, where actors collaboratively negotiated solutions that balanced compliance with local needs. Unlike contexts marked by overt resistance, contestation here manifested as creative adjustments that wove dissent into the network's fabric. Ethnographic data highlight two cases: the reinvention of local small businesses under QR-code regimes and

the integration of elderly residents into digital systems through solidarity.

*Local Small Businesses: Compliance as Collaborative Opportunity*

During the pandemic, local enterprises, particularly those reliant on foot traffic, faced existential threats under strict health code entry requirements and lockdown policies. In this target community, rather than resisting or circumventing protocols, some small businesses partnered with the RC to design hybrid operational models that safeguarded both public health and economic viability. An example is a family-owned noodle shop (noodle shop A hereafter) that reimagined its service flow:

• Pre-Order via WeChat Mini-Program: Customers booked meals and uploaded health codes in advance, reducing in-person interactions.

• Contactless Pickup Stations: The shop installed a simple locker at the community gate, allowing customers to retrieve orders without entering the premises.

• Home delivery: the RC arranges for specialized personnel and access to allow noodle shop A to provide home delivery of meals to certain fully segregated households.

The owner explained this:

> "The RC helped us set up the pre-order system—it wasn't just about rules. They saw our struggle... At that time, most of our orders came through the WeChat Mini-Program, and we've even gained new customers from other blocks."
>
> (Owner of Noodle Shop A, F7M1)

*Elderly Integration*

For seniors unfamiliar with smartphones, mandatory QR-code systems initially posed exclusion risks. Instead of punitive measures, the RC mobilised youth volunteers and family networks to develop intergenerational mentorship programs. At the same time, for those refusing smartphones, the RC issued laminated QR cards updated biweekly by volunteers, ensuring access to essential services.An 82-year-old participant shared: "My grandson taught me to scan codes, but when my hands shake, the volunteers help. The

paper card is my backup—it shows the community hasn't forgotten us." (Resident F4M2)

By April 2020, most of elderly residents had adopted digital or hybrid code systems. These cases illustrate how ANT's concept of productive controversy (Callon, 1986) operates in practice. Contestations did not rupture the actor-network but instead spurred innovations that strengthened its resilience. The noodle shop's hybrid model exemplifies translation through negotiation, where conflicting interests (economic survival vs. biosecurity) were reconciled into a new operational standard. Similarly, elderly integration efforts demonstrate obligatory passage points (OPPs) being dynamically reshaped to accommodate marginalized actors, ensuring the actor-network's legitimacy.

Crucially, such adaptations relied on distributed agency (Latour, 2005), wherein action emerged from the interplay of human and non-human actors. Non-human actants, such as WeChat Mini-Programs and physical paper codes, functioned as boundary objects (Star and Griesemer, 1989)—flexible enough to maintain a common identity across different groups of actors (e.g., youth and elderly residents), while allowing for localized interpretations and uses. These objects mediated between generational and technological disparities, enabling coordination. Simultaneously, human actors—volunteers and business owners—acted as interessement brokers (Callon, 1986), actively translating inflexible, top-down protocols into context-sensitive, cooperative practices. Through this process of material mediation and social translation, the actor-network achieved a stability, demonstrating that accountability during crisis was sustained not by rigid adherence to rules, but by the continuous, situated work of aligning diverse actors and artifacts.

This section has traced how the community's emergent actor-network was stabilised through a suite of interessement mechanisms. By interlacing material devices with moral narratives of collective duty, the actor-network evolved from a contested assemblage into a functioning governance system. This stability, however, was always dynamic. It did not eliminate underlying tensions but temporarily contained them. As the analysis in the following chapter will reveal, the sources of this stability, e.g., the reliance on algorithmic authority, and the distributed nature of coercion, would become sites of contestation.

## 5.4 Enrolling Actors: Coordinating and Formalising Roles

Building on the interessement mechanisms outlined in Section 5.3, this section examines the enrollment phase of actor-network formation—the process through which heterogeneous actors are integrated into the actor-network, adopting defined roles that sustain collective action (Callon, 1986). In Actor-Network Theory (ANT), enrollment is not merely about inclusion but involves the active negotiation and stabilisation of relationships to ensure actors remain committed to the actor-network's objectives (Callon, 1986). During the COVID-19 pandemic, this phase unfolded as a dynamic interplay of human and non-human actors, where roles were codified, responsibilities institutionalized, and resistance mitigated through socio-technical alignment. Drawing on ethnographic data, this section traces how enrollment solidified the community's pandemic governance assemblage by addressing three key dimensions: (1) the formalization of human roles (e.g., residents, RC staff, volunteers), (2) the embedding of non-human actants (e.g., health codes, quarantine seals) as indispensable actor-network components, and (3) the resolution of residual tensions through adaptive compromises.

### 5.4.1 Formalising Human Roles: From Provisional to Institutionalized Agency

The chaos of early 2020 (see section 5.2) had compelled residents and RC staff to adopt improvised roles—gatekeepers, caregivers, data curators—but these remained fluid and contested. Enrollment required transforming these provisional identities into institutionalized roles, complete with explicit expectations, accountability mechanisms, and symbolic legitimacy.

*RC Staff: From Messengers to Multifunctional Coordinators*

Pre-pandemic, RC staff viewed themselves as passive relays of municipal directives. By mid-2020, their role expanded into a hybrid identity blending administrative authority, technical expertise, and community advocacy. This shift was formalized through three main projects.

Firstly, a tructured training programs was initiated. In April 2020, the municipal

government mandated crisis management workshops for RC staff, covering topics such as conflict resolution, health code troubleshooting, and psychological first aid. A staff member reflected:

> "Before, we just forwarded notices. Now, we are trained to handle fever cases, mediate disputes, even operate the quarantine seal. It's like we have become 'Swiss Army knives' of pandemic management."
>
> (RC Staff 8)

Moreover, a number of role-specific metrics were created. Performance evaluations shifted from bureaucratic compliance (e.g., report submission rates) to outcome-based criteria, such as quarantine compliance rates and resident satisfaction scores. These metrics were displayed on community bulletin boards, fostering transparency and residents monitoring. Simultaneously, RC staff received symbolic legitimisation. They wore uniforms emblazoned with "社区健康卫士"(Community Health Guardian), visually distinguishing them from pre-crisis roles. A resident noted: "Seeing them in those vests made it official. They weren't just volunteers anymore—they had authority." (Resident F2M1)

*Residents: From Fragmented Individuals to Collective Agents*

Residents' enrollment hinged on reframing pandemic compliance as a civic identity rather than a burdensome obligation. In this process, fragmented individualism transitioned to organic collective agency, driven not by artificial incentives but emergent social adaptations. Two realignments solidified this shift:

• Neighbourhood Mutual Aid Groups:

Pre-existing social ties (e.g., parent groups, hobby circles) evolved into flexible mutual support units. For example, residents in Building 5 formed a "Resource Pooling Network" where households contributed surplus masks, medicines, or skills (e.g., cooking, tech support) in exchange for needs they lacked. A member described:

> "When Auntie Wang ran out of blood pressure meds during quarantine, Mr. Li—a retired pharmacist—shared his reserves. Later, she repaid him by

tutoring his grandson in math. No apps or badges—just neighbours keeping score in their hearts."

(Resident F4M1)

• Building Representatives[2]：

Elected "楼长" (Building Representatives) emerged to bridge RC directives and resident realities. In Block C, a teacher volunteered to relay policy updates and organise door-to-door deliveries. Her authority derived not from titles but contextual legitimacy: "Residents trusted me because I lived their struggles. When the RC insisted on 7 AM code scans for night-shift workers, I negotiated afternoon alternatives. They listened because I spoke for us, not to us."

Building representatives' enrolment followed a specific logic of interessement: the RC delegated specific authority to them, effectively positioning them as pivotal intermediaries for the negotiation within the community. As Callon (1986) suggests, enrolment involves defining identities. Here, the building representatives accepted the identity of "patriarch/matriarch of the building," aligning their personal interest with the network's goal. Their authority was stabilised by their capacity to solve local problems (e.g., mediating timing disputes during lockdown) that the RC could not address sometimes.

By June 2020, most of the households in the community participated in mutual-aid groups, reduced potential top-down enforcement. Compliance stemmed from social interdependence, proving enrollment succeeds when actor-networks formalize existing collective logic.

*Big White (Volunteers): Bridging Formal and Informal Networks*

大白 (Big White) is a colloquial neologism inspired by the inflatable healthcare robot Baymax from the film Big Hero 6, originally connoting a gentle, protective guardian

[2] The term used here, "Building Representative" (楼长), refers to a resident volunteer appointed or elected to liaise between the Residents Committee and the households within a specific vertical residential block. The building representative manages the entire building, acting as the most granular node of the community governance system (Habich-Sobiegalla and Plümmer, 2023). Their role is pivotal in penetrating the private sphere of the household, bridging the structural gap between formal bureaucratic administration and the domestic life of residents during the crisis (Qin and Owen, 2021).

(Choy and Choy, 2024). Empirically, this category represents a highly heterogeneous group of actors—ranging from medical professionals and police officers to civil servants and community volunteers. From an ANT perspective, the term signifies the “black-boxing” of these diverse identities into a singular, anonymous figure of authority. The white hazmat suit functions not only as personal protective equipment (PPE) but as a material device of enrolment, stripping individuals of their pre-pandemic social roles (e.g., neighbour, teacher) and assigning them a standardised agency representing state power and sanitary control (see Su et al., 2024).

In the community, the RC established a “Community Volunteer Registry,” requiring registration, background checks, and role assignments (e.g., delivery coordinators, tech tutors). In return, big white (volunteers) gained access to municipal resources, such as personal protective equipment supplies and training seminars. A volunteer leader noted:

> “We went from being ‘helpers’ to ‘partners.’ The RC gave us official uniforms, which made it easier to negotiate with supermarkets for bulk discounts. It felt like we’d earned a seat at the table.”
>
> (Volunteer 4)

Similarly, the "Big White" represents a distinct form of actor-network enrolment. In the community, this group was extremely heterogeneous, comprising such as civil servants, corporate employees, and university students. The process of enrolling these diverse individuals into a singular, cohesive force relied heavily on the "Big White" suit itself as a non-human actor of interessement.

Donning the suit performed a stripping of individual identity (status, gender, profession) and replaced it with a generic, authoritative anonymity. The suit functioned as a device of enrolment that aligned their interests: once inside the suit, the actor was physically and symbolically separated from the "risky" public, bound to the protocols of the sanitary regime. This illustrates how enrolment was achieved materially: the actors consented to be mobilised as nodes of the governance actor-network, accepting the time comsumption in exchange for the moral status of "heroism" constructed by narratives.

### 5.4.2 Embedding Non-Human Actants: From Tools to Actor-Network Pillars

Non-human actants, initially provisional solutions during interessement, became indispensable actor-network participants during enrollment. Their integration relied on two processes: technical refinement and symbolic naturalization.

*Health Codes: Enforcement Tool to Social Infrastructure*

The health code system evolved from a single instrument into a multifunctional platform embedded in everyday life. Glitches in early algorithms (e.g., false yellow codes) were mitigated through machine-learning adjustments and manual oversight. By June 2020, the system incorporated real-time nucleic acid test results and vaccination statuses, enhancing accuracy.

At the same time, the code's tricolour logic permeated cultural discourse. Phrases like "保持绿码" ("Keep your code green") entered everyday vernacular, symbolizing moral and biological safety. A resident remarked: "A green code became like a lucky charm. " (Resident F4M1)

*WeChat: From Battlefield to Command Centre*

WeChat's enrollment involved formalizing its dual role as enforcer and engager. For instance, one function of Wechat, this Mini-Programs were upgraded to automate code renewals, symptom reporting, and policy updates. Residents received personalised alerts (e.g., "Your code expires in 2 hours—renew now!"), reducing reliance on human reminders. Moreover, participatory feedback loops were initiated in the WeChat platfrom. The RC created a chat group named "Voice of the Community", where residents could propose local policy adjustments. For example, when residents working night shifts repeatedly raised the issue that 7 AM green code checking schedules conflicted with their sleep patterns, the RC used the WeChat's Mini-Program to poll all households on preferred time slots. Based on the data collected, checking hours were adjusted to include an additional afternoon session—a change that was then announced and explained through the same platform.

*Infrared Thermometers: From Contested Devices to Ritualized Gatekeepers*

Initially disputed during the problematisation phase (Section 5.2.2), contactless thermometers evolved into legitimised boundary regulators. The initially contested thermometers, which had been a focus of disputes over accuracy and authority during the problematisation phase (Section 5.2.2), underwent a gradual process of technical and social legitimisation. Early reliability concerns were addressed through municipal protocols and the integration of health codes. The shift from handheld to wall-mounted units at community gates further standardised the measurement process, reducing variability introduced by human operators. Over time, the temperature checkpoints became normalised components of daily routine. As one volunteer noted with pragmatic resignation, "People just line up, show their foreheads, and move on. It’s become a habit, like showing your ticket on the trains station." (Volunteer 2)

*Policy Documents: From Ambiguous Texts to Operational Frameworks*

Municipal lockdown directives, which initially functioned as ambiguous "boundary objects" (Star and Griesemer, 1989) allowing divergent interpretations across different groups, were codified into actionable protocols:

| Evolution Phase | Pre- enrollment | Post- enrollment |
|---|---|---|
| **Form** | PDF bulletins in WeChat groups | Laminated flowcharts at checkpoints |
| **Function** | Interpretive flexibility | Standardised decision |
| **Authority** | Contested legitimacy | Embedded in SOPs (Section 5.5.3) |

Table 5-1: Institutionalisation Trajectory of Policy Documents

For example, the ambiguous "essential travel" clause (Section 5.2.2) was operationalized through community-specific criteria:

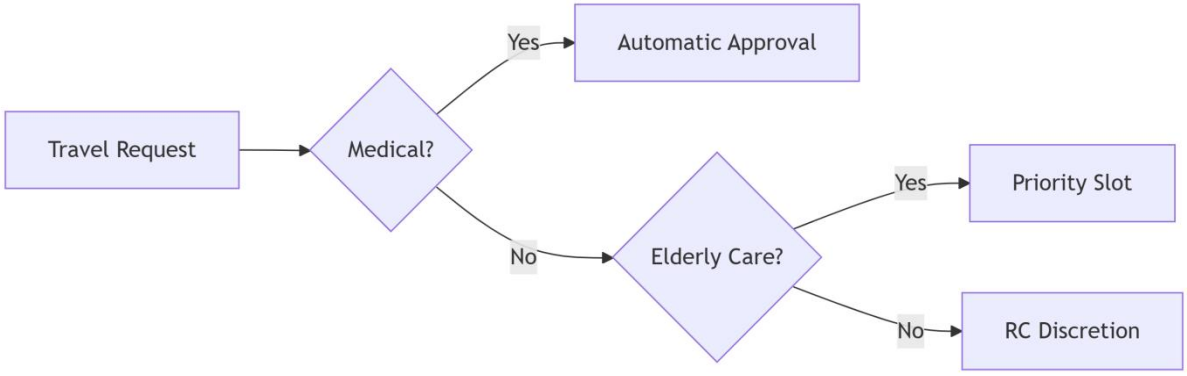

Figure 5-1: The Materialisation of 'Essential Travel'

This translation from contested texts to actionable frameworks exemplifies how abstract policies acquire authority through specification and material embedding. For instance, "essential travel" specifying acceptable reasons (e.g., "medical visit with appointment slip") and required proofs. This shift from textual ambiguity to procedural clarity reduced discretionary enforcement. The flowchart—durable, publicly visible, and integrated into checkpoint routines, made compliance a matter of simple, repetitive action rather than continuous interpretation.

### 5.4.3 Enrollment as Translation: Reconciling Interests into Collective Action

Enrollment, in ANT terms, represents the stabilisation of translations—the alignment of divergent interests into a coherent actor-network. In this community, the OPP of "collective containment" was embraced as a negotiated necessity. Residents accepted restrictions not out of fear but through participation in their design (e.g., staggered checking windows). Moreover, human and non-human actors operated synergistically. For instance, quarantine seals (non-human) gained legitimacy through volunteer support (human), while volunteers derived authority from municipal tools (non-human). However, enrollment was not a finite endpoint but an ongoing negotiation. As one RC staff summarized: "Every time we solved a problem, two more popped up. But each fix made the network stronger—like weaving a net that catches more with every knot." (RC Staff 6)

By mid-2020, the community's pandemic governance network had transitioned from a fragile interessement phase to a temporary stabilised enrolment phase. Human actors adopted institutionalized roles, non-human actants became naturalized infrastructures, and residual tensions were mitigated through adaptive compromises. This phase underscores ANT's core tenet: actor-networks gain stability not through rigid control but through fluid, inclusive negotiations that bind actors to shared objectives (Callon,1986). However, as Chapter 6 will explore, stabilisation is provisional—a precursor to further translations as new actors (e.g., vaccine distributors) and challenges (e.g., pandemic fatigue) emerge. For now, enrollment solidified the community's capacity to govern collectively, proving that even during crisis, heterogeneous actors can cohere into a resilient socio-technical assemblage.

## 5.5 Mobilising the Actor-Network: Stabilising Spokespersons and Contesting Representations

Building upon the enrolment of actors and formalisation of roles detailed in Section 5.4, this section examines the mobilisation phase within the community's pandemic actor-network. Mobilisation represents the culmination of Callon's (1986) sociology of translation, where the actor-network achieves relative stability through the consolidation of legitimate spokespersons.

In Actor-Network Theory (ANT), the concept of spokesperson is central to understanding how actor-networks achieve durability and coherence through representation. As Callon (1986, p. 211) argues, spokespersons are authorised intermediaries who "speak on behalf of" the enrolled collective, translating diverse interests into a unified account that legitimises the actor-network's objectives. This role is not limited to human actors; non-human entities (e.g., data dashboards, policy documents) can also function as spokespersons by stabilising knowledge and enforcing norms (Latour, 2005). The spokesperson's authority hinges on their ability to withstand "trials of strength" and maintain fidelity among represented actors, making mobilisation a precarious yet essential moment for actor-network stabilisation.

Crucially, this stability is always provisional and contested, reliant on the ongoing alignment of human and non-human actants and vulnerable to challenges over who truly speaks for the actor-network. Drawing on ethnographic data (January 2020 - December 2020), this section analyses how mobilisation unfolded within the community. It argues that mobilisation was achieved through two interconnected processes: (1) the emergence and legitimisation of hybrid spokespersons (human and non-human); (2) the deployment of socio-technical artefacts to solidify actor-network boundaries and authority. However, this process was continuously punctuated by contestation over representation, exposing the inherent fragility of mobilised actor-networks.

### 5.5.1 Establishing Legitimate Spokespersons: Hybrid Actors Speaking for the

### Network

The chaotic problematisation and fluid interessement phases revealed the impossibility of any single human actor (e.g., the RC alone) authentically representing the entire heterogeneous network. Mobilisation required the construction of hybrid spokespersons whose legitimacy derived from their ability to credibly articulate the network's core objective (collective pandemic containment), while incorporating the diverse voices enrolled within it.

By mid-2020, the RC solidified its role as the primary human spokesperson, but its authority was fundamentally redefined. It no longer acted merely as a municipal mouthpiece but as a network coordinator, its legitimacy increasingly tied to its perceived competence in managing the socio-technical assemblage. This shift was evident in its transformed communication style within WeChat groups. Rather than only broadcasting top-down directives, RC staff actively synthesised information:

> "Daily 7 PM Update: 0 new cases. 98% green codes. Grocery delivery slots for seniors: Sign up via Mini-Program by 9 AM. Reminder: Renew codes before midnight! #SafeCommunity #TeamEffort."
>
> (RC WeChat Post, August 12, 2020)

Residents referenced these posts in their daily decisions. One noted, "I wouldn't know when to book groceries or if it was safe to let my kid play outside without that 7 PM update. It was our community's bulletin board" (Resident F5M2). This post exemplifies the hybrid spokesperson role: announcing outcomes (0 cases, 98% green codes - validated by non-human systems), facilitating care (grocery slots), enforcing protocol (code renewal), and invoking collective identity (#SafeCommunity #TeamEffort). Crucially, its claims were backed by data visible to residents, fostering trust through transparency.

At the same time, non-human actants became indispensable spokespersons, lending perceived objectivity and efficiency to the network's actions. Their "voice" was often more readily accepted than direct human commands. For example, the health code's tricolour status became the ultimate arbiter of mobility rights within the community. A green code spoke louder than any RC staff member, granting access; a red code mandated isolation,

irrespective of personal appeals. Its authority stemmed from its connection to the broader municipal system and its presentation as neutral, scientific fact. Residents frequently referred to its dictates in their own terms: "My app says green, so I'm good to go. If it's red, no amount of arguing with the guard will help – it's the system" (Resident F8M1). Another resident described the code as a "digital passport" that dictated daily life (Resident F3M1), underscoring its role as a powerful non-human spokesperson whose directives were often accepted as non-negotiable.

Also, the “centralised data dashboard”, introduced in July 2020 and displayed in the community lobby and within the WeChat Mini-Program, became another key spokesperson. This real-time dashboard showed active cases, quarantine statuses, code compliance rates, and resource stock levels. It provided an authoritative point of reference, resolving conflicting rumours and justifying RC actions. Residents reported checking the dashboard multiple times a day:

> "Before going to work, I'd check the dashboard.. If it showed zero active cases in our block, I felt safer... If it showed mask delivery for our area will arrive after 3 days later, I knew to use mine sparingly...we could see it for ourselves" (Resident F9M2)

Also, RC staff acknowledged its role: "When the dashboard shows low mask stock, everyone accepts the rationing. It's the numbers talking, not us making excuses" (RC Staff 8). The dashboard's authority was therefore socially experienced as a transparent source of truth, stabilising the actor-network by making complex realities simple, visible, and seemingly objective.

Quarantine seal alerts acted also as an immediate, non-negotiable spokesperson. The automated alert triggered by a breached seal demanded an urgent RC response and validated enforcement actions to other residents. The sound of the alarm itself became a powerful signal within the community:

> "Everyone knew what that beeping meant.. You'd look out your peephole and see the big whites rushing over. It was like the building itself was reporting the

problem... the seal had spoken."

(Resident F4M3)

The seal's alert translated the breaking quarantine into an unambiguous, audible event that necessitated a specific response, thereby stabilising the accountability mechanism.

Beyond these non-humans, the "Big White" volunteers emerged as crucial mediating spokespersons between the official structure and resident concerns. Their legitimacy stemmed from their embeddedness within the community and their visible acts of care. They translated complex protocols into actionable steps for residents and relayed grassroots frustrations and suggestions back to the RC in credible ways. The symbolic power of their white suits was significant. A resident commented: "Seeing the 'Big Whites' in their suits was reassuring. It was a clear sign that someone was on duty, taking care of things." (Resident F1M2). Another resident highlighted their role as translators:

"The Big Whites aren't just helping; they are us. When they explain why a rule exists – like why we can't gather – we listen differently than when it just comes as a notice in the group chat"

(Resident F6M1)

Volunteers' authority was thus performative, built through daily, visible acts of assistance that resonated more deeply than abstract rules.

This hybrid ecosystem of spokespersons, e.g., the data-backed RC, the algorithmic health code, the visible dashboard, the audible seal alarms, and the trusted Big Whites, collectively articulated the network's purpose and operational logic. Their combined voices, experienced by residents through daily routines, trusted data points, and embodied interactions, stabilised the representation of "the community pandemic response." The actor-network's strength lay in this multiplicity, where different forms of authority–technical, numerical, visual, auditory, and relational–overlapped and reinforced one another, making the abstract notion of accountability tangible and actionable in the lives.

### 5.5.2 Solidifying Boundaries and Authority: Artefacts of a Mobilised Actor-Network

Mobilisation involves defining the actor-network's boundaries, who and what is definitively inside, subject to its rules and represented by its spokespersons, and solidifying its authority to act (Callon, 1986). This was achieved through tangible socio-technical artefacts.

By September 2020, the physical resident pass (pre-pandemic) was integrated with a scannable QR code linked to the municipal health database. This laminated badge became the material token of network membership. Possessing a valid badge with a green code was the prerequisite for accessing communal spaces and services within the compound. Its absence or a non-green status physically excluded individuals, materially defining the actor-network boundary. "No badge, no entry. It's simple. Everyone understands that rule now. The badge is your place here during the pandemic" (RC Staff 4).

At the same time, the protocols developed during interessement and enrolment were codified into formal Standardised Operating Procedures (SOPs) in August 2020. This document, accessible via WeChat and posted in the RC office, detailed:

- roles and responsibilities (RC staff, Volunteers, Security, Residents)
- health code verification and dispute procedures;
- quarantine management protocols (seal application, support delivery);
- Testing schedules and logistics
- communication channels and escalation paths.

For many residents, the SOPs provided a welcome clarity that reduced arbitrary enforcement. As one resident noted, "Before...everything felt unpredictable. Afterward, even if you didn't like the rules, at least you knew what they were" (Resident F1M1). The SOPs also provided objective reference point that reduced ambiguity and justified enforcement actions for RC staff: "When someone complains, we just point to Section 4.2 of the SOPs. It's not our personal decision; it's the network's rule" (RC Staff 5). However, the formalization also created new rigidities. Staff sometimes found themselves bound by procedures that failed to account for unique circumstances, leading to quiet workarounds. As one RC member confided:

> "The SOPs say we must report a yellow code immediately. But if it's clearly a system error and the resident is elderly, we might call them first to check before triggering a full alarm."
>
> (RC staff 4)

Thus, while the SOPs successfully institutionalized roles and reduced conflict, they also introduced a tension between procedural governance and situated judgment.

Moreover, a centralised resource allocation system was settled. Control over essential resources (PPE, designated grocery delivery slots, access to municipal testing teams) was centralised under RC management, guided by the dashboard data and SOPs. This control was a key source of the RC's power as primary spokesperson. Access to these resources was contingent on compliance with network rules (e.g., maintaining green status, adhering to testing), reinforcing membership boundaries and the cost of dissent. "If you skip your test, your code might yellow, then you can't sign up for the priority vegetable delivery. The system connects it all" (Resident F6M1).

### 5.5.3 Contestation and the Fragility of Mobilisation: When Spokespersons Fail

Despite these stabilising mechanisms, mobilisation remained inherently fragile. Contestation over representation and the actor-network's direction persisted, exposing tensions particularly when spokespersons were perceived as failing or misrepresenting the collective. For instance, in July 2020, a systemic glitch (the interviewed residents claim so) in the municipal algorithm falsely assigned red codes to 3 residents with no risk history. The automated system (non-human spokesperson) immediately mandated strict home isolation with seals. The RC (human spokesperson), initially slow to respond due to bureaucratic hurdles in overriding the system, faced intense backlash. Residents flooded the "Voice of the Community" group with anger: "The code says I am a danger! But I have done everything right! The RC is useless!" (WeChat group message); "This 'scientific' system is broken! Who speaks for us when the machine lies?" (WeChat group message)

As frustration mounted, dissent spread beyond the directly affected households. In addition to the messages of residents marked as red in error, other residents also follow some comments in the chat groups to express dissatisfaction or anxiety: "Why did he suddenly

turn red? I saw that he (a resident marked with a red code) went out to buy groceries yesterday. "; " Isn't it too scary to be marked red even if he's not positive..."(WeChat group messages). Neighbours who had previously complied willingly began questioning the system's legitimacy, creating fissures in the actor-network's cohesion. The RC's delayed response—initially relying on standard bureaucratic protocols to challenge the error codes—further eroded trust. It was only when volunteers intervened, providing practical support to the isolated households while simultaneously pressuring the RC to expedite manual reviews, that a precarious resolution was achieved.

By late 2020, declining case numbers and prolonged restrictions led to growing "pandemic fatigue." Some residents began questioning the ongoing intensity of the containment OPP itself, challenging the core mandate of the spokespersons. Calls emerged in the WeChat group for relaxing certain rules (e.g., outdoor mask mandates in low-density areas). While the RC and dashboard data (showing persistent external risk) were used to justify maintaining protocols, this represented a fundamental challenge to the actor-network's rationality. "Why are we still living like this when the city has few cases? Is the RC and Big Whites just enjoying the control?" (WeChat message, Novermber 2020). Maintaining mobilisation required the spokespersons to continuously re-articulate the rationale for the OPP and demonstrate flexibility where possible.

The mobilisation phase within the community's pandemic actor-network demonstrates that stability is not a endpoint but a state of temporary balance. It was achieved through the careful construction and ongoing maintenance of a system of hybrid spokespersons whose legitimacy was derived from their perceived effectiveness in serving the actor-network's core goal (containment) and their ability to credibly represent (or manage the representation of) its enrolled actors. Non-human actants (health codes, dashboards, SOPs, physical badges) were pillars of this spokesperson system, lending authority, objectivity, and boundaries.

The mechanisms developed for conflict resolution and representation (feedback channels, mediating roles like volunteers, community rituals) were essential for absorbing dissent and preventing minor fractures from rupturing the actor-network. Even though, mobilisation remains vulnerable, the boundaries of the actor-network and the legitimacy of its spokespersons are constantly tested. Spokespersons must continually prove their worth

and their alignment with the actor-network's objectives. The OPP itself can be challenged when circumstances evolve or costs become too high for some actors.

## 5.6 Conclusion

This chapter has traced the initial assemblage of a pandemic accountability network within the community, following the four moments of translation outlined by Callon (1986). The analysis began with the chaotic problematisation of the crisis, which ruptured pre-existing governance structures and established viral containment as an OPP. It then detailed the interessement mechanisms, ranging from the coercive power of health codes and quarantine seals to the moral re-education centred on collective duty, that locked heterogeneous actors into their roles. Through enrolment, these provisional roles were formalised and stabilised, as both human actors (e.g., RC staff becoming 'Health Guardians', residents forming mutual-aid groups) and non-human actors (e.g., WeChat evolving into a command centre, health codes becoming social infrastructure) were integrated into institutionalised positions. Finally, the chapter examined mobilisation, showing how a hybrid system of spokespersons—combining the data-backed authority of the RC, the perceived objectivity of algorithmic systems, and the grassroots legitimacy of volunteers—was established to represent and stabilise the actor-network.

By the end of 2020, the community had achieved provisional stability. The actor-network, though born of crisis, demonstrated capacity for coordination, performed accountability through interplay of human vigilance and non-human enforcement. This mobilised assemblage appeared, for a time, to be a coherent whole. However, stability in actor-networks is never permanent, it is a precarious achievement that must be continuously maintained (Latour, 2005). The processes of mobilisation that strengthened the actor-network's authority also sowed the seeds of its future disturbance. For example, the reliance on algorithmic spokespersons created vulnerabilities to technical glitches, as seen in the 'false red code' incident. Similarly, the centralisation of control under the RC, while efficient, set the stage for contestation when policies began to shift and 'pandemic fatigue' set in.

Thus, the mobilisation described in this chapter represents a fragile stability. As the crisis persisted, the costs of alignment grew, and the initial consensus around the OPP of ‘containment at all costs’ began to fray. The following chapter picks up the story. It examines how this carefully constructed assemblage was tested and even disrupted by emerging moral dilemmas and acts of resistance. It explores how accountability, once performatively stabilised, became a site of controversy, leading to the actor-network’s unravelling and its improvisational reassembly.

# Chapter 6: Disturbing the Actor-Network – Resistance, Withdrawal, and Reassembly

## 6.1 Introduction

This chapter contends that the gradual disintegration of the pandemic governance actor-network—initially consolidated through crisis-driven coordination (as detailed in Chapter 5)—precipitated a phase of destabilisation characterized by ethical contestations, infrastructural decay, and grassroots improvisation. As national pandemic policies shifted from unified "Dynamic Zero-COVID" to fragmented "Precision Prevention," the imperative of "collective containment" dissolved, unmasking latent tensions within the sociotechnical infrastructure of accountability. Deploying the sociology of translation framework (Callon, 1986; Latour, 1987) established in preceding chapters, this analysis interrogates how the actor-network's unraveling catalyzed cycles of reconfiguration: controversies over policy-device misalignments and algorithmic failures emerged as critical junctures through which actors improvised alternative accountability assemblages.

Consequently, this chapter directly addresses a question arising from the actor-network's evolution: How is accountability distributed, and reassembled through socio-material networks during COVID-19? Central to this inquiry is tracing the dynamic processes through which actors contested decaying infrastructures, navigated moral ambiguities, and reassembled localized systems of care and control. Notably, these material and discursive ruptures functioned as catalysts for innovation: residents' tactical disobedience reconfigured surveillance tools into negotiable boundary objects, while frontline workers' pragmatic bricolage wove low-tech solutions (e.g., handwritten health logs) and relational care into new hybrid governance forms.

Section 6.2 begins by examining policy softening and actor fatigue as dual destabilising forces. It traces how national policy ambiguities ("tiered controls;" "precise prevention") eroded the coherence of local enforcement protocols, while decaying digital infrastructures (glitching health codes, frozen data dashboards) and human exhaustion dissolved the moral and operational bonds forged during the crisis. Section 6.3 then analyses the emotional and ethical consequences of this fracture, documenting how frontline enforcers grappled with

moral distress amid contradictory obligations, and how residents navigated ontological insecurity as institutional protections crumbled. Crucially, this affective landscape became ground for ethical reassembly, where anguish and anxiety fueled situated innovations. Building on this, Section 6.4 details grassroots reconfiguration—the processes through which residents' tactical disobedience, staff improvisations, and emergent mutual-aid networks reassembled shards of formal accountability into informal socio-material arrangements centered on care, solidarity, and pragmatic adaptation. Finally, Section 6.5 synthesizes these dynamics through an ANT lens, arguing that controversies over failing devices and contested policies operated not as terminal breakdowns but as generative sites for re-translation, wherein actors enrolled unexpected resources (e.g., paper protocols, medicine baskets) and redefined moral imperatives to forge resilient, community-owned accountability systems.

Collectively, this chapter reveals that actor-network stability is perpetually provisional. The dissolution of the original pandemic assemblage did not culminate in chaos but in contentious, adaptive reassembly—a testament to the capacity of heterogeneous actors to reconfigure accountability through crisis, even as institutional frameworks faltered.

## 6.2 Policy Softening, Breakdown of Devices and Trust

By late 2020, the assembled actor-network for pandemic governance — forged through crisis and stabilised via hybrid human-non-human alliances—began fraying at its seams. Policy shifts at the national level, exhaustion among community actors, decaying technological infrastructures, and eroding trust converged to disrupt the once-cohesive accountability system. Drawing on Callon's (1986) sociology of translation, this section examines how the obligatory passage point (OPP) of "collective containment" lost its non-negotiable authority. As policies softened, devices malfunctioned, and actors disengaged, the actor-network's moral foundations—where accountability meant protecting the collective — fractured into contested, often contradictory, obligations.

### 6.2.1 Policy Softening: From "Dynamic Zero" to "Precise Prevention"

National policy transitions reverberated through the community's governance assemblage. The first major transition occurred in May 2021 when the National Health Commission (NHC) issued the "Optimised Guidelines for COVID-19 Prevention and Control"(优化防控工作方案) (NHC, 2021). This policy replaced blanket restrictions with "分级分类管控" (tiered classification controls), marking the initial softening of China's "Dynamic Zero-COVID" strategy (NHC, 2021). Key changes included: (1) Reduced Centralised Quarantine: From 21 days to 14 days centralised + 7 days home isolation; (2) Relaxed Travel Restrictions: Low-risk interprovincial travelers no longer required PCR tests and (3) Localized Lockdowns: Only buildings (not entire communities) to be sealed for single cases (National Health Commission, 2021).

The guideline transformed clear-cut protocols into ambiguous "boundary objects" (Star and Griesemer, 1989). For example, the term "low-risk traveler" sparked disputes when a resident returning from Guangzhou (then a green-code zone)[3] was denied entry by RC staff citing "discretionary authority":

> "My code was green! The policy says 'no restrictions for low-risk areas.' But the RC claimed our bus station was a 'dangerous zone.' Who defines 'risk' now—algorithms or guards?"
>
> (Resident F2M2)

RC staff faced impossible choices. Trained for binary enforcement (red/green codes), they lacked frameworks for tiered risk assessment. A staff member noted: "Before, we sealed doors. Now we debate: Is a 'close contact of a close contact' high-risk? The handbook gives no answers. Residents scream, 'Show us the rules!'"(RC Staff 4)

Moreover, the 14+7 quarantine reduction fractured the material coherence of containment. Quarantine seals—once applied uniformly for 21 days—now faced rejection as residents contested shortened timelines: "The rules say 14+7! Why is this sensor still on my door

[3] Refers to an area that has no large number of local COVID-19 cases for a continuous period of time and is officially designated as low risk. Based on dynamic risk assessment, factors such as the number of local cases and the clarity of the transmission chain will be considered and adjusted according to changes in the epidemic situation (NHC, 2021). Adhere to the national guidelines for "graded and classified control", but the specific implementation standards may vary depending on the time and place.

after day 16? Are you inventing your own laws? (WeChat voice message, August 2021)

Additionally, the State Council's "Notice on Further Optimising COVID-19 Response Measures" (November 11, 2022) marked a pivotal shift, replacing universal lockdowns with "精确防控" (precise prevention) (NHC, 2022). Key changes included: (1) Shortened Quarantine Durations: Centralised isolation cut from 14 to 7 days + 3 days home monitoring; (2) Removed Mass Testing Mandates: PCR tests no longer required for public transport or venues outside high-risk zones and (3) Relaxed Travel Restrictions: "Green Code" mutual recognition across provinces (State Council, 2022).

In the community, these abstract policies materialised as tangible disarray. Municipal directives became ambiguous "boundary objects" (Star and Griesemer, 1989), open to conflicting interpretations. For example, the term "high-risk area" now applied only to specific residences—not entire compounds—straining the RC's authority to enforce building-wide restrictions. One resident challenged RC staff in a WeChat voice message:

> "The State Council says lockdowns should be 'precise,' but you sealed Building 8 because of one case? Where's the precision? You're just lazy!"
>
> (Resident F7M2, November 2022)

RC staff, caught between diluted top-down mandates and grassroots anxiety, struggled to recalibrate roles. Training designed for crisis enforcement (see Section 5.4.1) proved useless for nuanced risk assessment. A staff member (RC staff 2) lamented:

> "Before, we followed clear rules: red code = seal the door. Now? We debate 'low-risk' versus 'high-risk' households for hours. Residents accuse us of making it up."
>
> (RC Staff 4, December 2021)

The policy softening dissolved the material coerciveness that bound actors to the OPP. Quarantine seals, once uncontested "Shackle" (see Section 5.3.1), were now rejected as outdated. In December 2022, households in Buildings 10 and 12 refused door sensors, arguing they violated "precise prevention" (event from RC Compliance Logs). The table below summarizes the key shifts in policies across the three distinct phases of containment

measures:

| Policy Element | Strict Containment Phase (Early 2020 - May 2021) | Tiered Control Phase (May 2021 - Nov 2022) | Precision Prevention Phase (Nov 2022 - Post) |
|---|---|---|---|
| **Official Policy** | "动态清零"(Dynamic Zero-COVID Strategy) | "分级分类管控"(Tiered Classification Controls) | "精确防控"(Precise Prevention) |
| **Quarantine Duration** | 21 days centralised quarantine | 14 days centralised + 7 days home isolation | 7 days centralised + 3 days home monitoring |
| **Lockdown Scope** | Entire communities sealed | Single buildings sealed | Individual households sealed |
| **Testing Mandates** | Universal PCR testing | Low-risk travelers exempted | Abolished for public transport/non-high-risk zones |
| **Travel Restrictions** | Provincial health code barriers | Green-code zones mutually recognised | Cross-province "Green Code" reciprocity |
| **Key Ambiguity** | Clear red/green code binaries | "Low-risk traveler" definition | "High-risk area" classification |

Table 6-1 Evolution of Key Pandemic Control Policy Elements (Early 2020- Late 2022)

Source: NHC (2020; 2021; 2022), State Council (2020; 2021; 2022)

### 6.2.2 Actors Fatigue

*When Non-Human Actors Broke Down*

The infrastructure underpinning accountability — e.g. health codes, data dashboards — began failing as maintenance lapsed and policy priorities shifted. For instance, the health code system, once the network's "second ID" (Resident F6M2, see Section 5.3.1), suffered chronic glitches due to insufficient updates. False "yellow codes" surged in late 2021 when the algorithm failed to sync with relaxed travel policies (China Digital Times, 2021). A nurse living in the community recounted being stranded at work:

> "My code turned yellow after a bus ride through a ‘historical risk zone’—a place with cases several months ago! The scanner at our gate flashed red. Security said, ‘Blame the system, not us.’ But who fixes the system?"
>
> (Residents F8M2)

RC staff lost faith in the tool’s authority. One admitted bypassing protocols:

> "If a resident’s code yellows but they have a negative PCR test, I manually override the scanner. The system’s broken—we can’t punish people for it."
>
> (RC Staff 6)

Similarly, data dashboard, the real-time "spokesperson" for community risk (see Section 5.5.1) froze for weeks when municipal servers stopped updates. Rumors replaced data: "They’re hiding real case numbers!" (WeChat Group Message, February 2022). This decay ruptured the feedback loops that legitimised enforcement. When devices malfunctioned, human enforcers (RC, Big Whites) lost their "algorithmic shield," exposing them to direct resentment.

*Human Fatigue: The Unraveling of Collective Will*

Non just non-human actors, the sustained crisis management exhausted every actor in the actor-network. For instance, the RC staff went from the "Health Guardians" to burnt-out bureaucrats. The hybrid identity of RC staff (Section 5.4.1) collapsed under contradictory demands. Trained for biosecurity enforcement, they now juggled pandemic policing with restoring pre-crisis welfare duties. A staff member described cognitive whiplash:

> "One hour I’m arguing about quarantine rules, the next I’m organising a dance contest for retirees. People yell, ‘Stop playing virus police!’ But if cases spike, the street office blames us."
>
> (RC Staff 3, March 2023)

66% of RC workers reported chronic insomnia or anxiety (data from Emotional Survey

Questionnaires for Frontline Workers), and 5 resigned by mid-2023. Those remaining avoided confrontations, letting minor violations (e.g., unmasked gatherings) go unchecked.

At the same time, the moral framing of compliance “protect your family, honor your elders" (see Section 5.3.2) — lost potency as perceived risks faded. A young residents captured the mood: "Grandma says, ‘Keep your code green!’ ‘Remember to wear a mask when you go downstairs!’ I say, ‘Grandma, the government says it’s over. Relax!’" (Resident F3M3)

Moreover, the "Big White" volunteers, once "grassroots ambassadors" (see Section 5.5.1), dwindled as symbolic rewards (e.g., "Model Volunteer" awards) lost prestige. Protective suits, initially worn with pride, now symbolized futility: "We sweated in these suits for three years. Now people laugh, ‘Are you cosplaying?’ No one volunteers anymore"(Volunteer 2). Only 8 of 32 volunteers remained by mid-2023, mostly retirees with no alternative social roles.

The pervasive fatigue observed across human and non-human actors reveals that the actor-network stability is contingent on continuous maintenance of socio-material alliances. When algorithms malfunctioned ("historical risk zone" glitches), their authority as spokespersons (Latour, 2005) collapsed, severing the feedback loops that legitimised enforcement. Similarly, human actors' exhaustion—RC staff avoiding confrontations, volunteers abandoning roles—signaled the disintegration of interessement bonds that once tied identities to actor-network objectives. This dual fatigue created a vicious cycle: decaying devices eroded trust in human enforcers ("Blame the system, not us"), while human withdrawal accelerated technical neglect (e.g., unrepaired QR scanners). The result was what Latour calls "fraying networks"—where actants drift from assigned roles, and accountability becomes a contested void. Crucially, this unraveling was neither random nor inevitable. It stemmed directly from policy-device misalignment (Section 6.2.1) that dissolved the moral and material coherence of containment. When residents mocked Big Whites as "cosplayers," they were rejecting not just volunteers, but the entire actor-network's crumbling legitimacy. Thus, actors fatigue is less about individual burnout than the systemic failure to re-translate the OPP as the crisis evolved.

At this point, the community’s pandemic assemblage existed in suspended disintegration.

The OPP of containment had dissolved, yet no new imperative replaced it. Policies softened but lacked coherence; devices functioned intermittently; actors complied selectively. Accountability, once a shared moral compass, had become a site of contestation—between state and citizen, individual and collective, rule enforcer and rule bender. This liminality exposed ANT's insight: actor-networks stabilise not through permanence, but continuous translation. As one RC staff wearily observed: "We built a machine to fight the virus. Now the virus faded, but the machine keeps grinding. No one remembers why it runs." (RC Staff 2, June 2023)

The pervasive fraying of the socio-material alliances documented in this section —manifested through policy ambiguities, technological decay, and actor fatigue—did not merely create operational voids, it also precipitated profound human cost. As the once-cohesive network of accountability disintegrated, the actors caught within its unraveling threads—frontline enforcers navigating contradictory mandates, residents confronting eroded protections—were thrust into states of psychological distress and moral uncertainty. Section 6.3 therefore examines the emotional burdens and reflexive ethical struggles that emerged as the fractured governance assemblage transformed accountability from a shared imperative into a source of individual anguish and communal tension.

## 6.3 Emotional Burdens and Reflexive Ethics - The Human Cost of Fractured Accountability

The fragmentation of the pandemic governance assemblage documented in Section 6.2 generated profound emotional and ethical consequences that permeated the community's social fabric. As Latour (2005) observes, when actor-networks fray, the resulting instability forces actors into reflexive positions where established norms and roles become sites of ethical struggle. From this, section 6.3 examines how the breakdown of socio-material alliances (Müller, 2015) transformed accountability from a shared collective imperative into a source of psychological distress and moral uncertainty. Drawing on empirical data from community health surveys, WeChat group messages, and frontline worker logs (March 2022-July 2023), this study trace three interconnected burdens: the moral distress of enforcers caught between contradictory obligations, the existential anxiety of residents

navigating eroded protections, and the relational ruptures fracturing community cohesion. Crucially, these emotional costs were not peripheral effects but constitutive forces that accelerated actor-network disintegration, while simultaneously seeding ethical reconfiguration —a dynamic termed reflexive accountability.

### 6.3.1 Moral Distress: The Crisis of Frontline Enforcement

With the policy's inconsistency and the fatigue of the actors, the RC staff and big whites found themselves trapped in a moral dilemma: recognising ethical obligations while lacking agency to fulfill them. These frontline actors navigated what Mol (2008) terms competing logics of care—torn between institutional mandates and communal ethics. As policies softened (see Section 6.2.1) without coherent retraining, RC staffs reported feeling "abandoned by the system they served." Staff 4 captures this:

> "The policy makes it seem as if we are all legal experts who can learn overnight, and execute the new regulations perfectly like robots. The day before, I was still delivering supplies to residents, sleeping only five hours a day, and the next day, a resident in quarantine started yelling at me because of the new policy. To be honest, I didn't fully understand how to implement the newly issued regulations either... It seems like everything is my fault."
>
> (RC Staff 4)

Similarly, as non-human actors malfunctioned (see Section 6.2.2), human enforcers lost their moral scaffolding:

> "In the past, we had a data dashboard where everyone could see the number of new cases in the community and the tasks we needed to complete. However, the government stopped releasing real-time case numbers, so the data board couldn't be updated. Residents didn't know what we were doing every day and assumed we were idle. Not to mention the yellow code malfunctions... Every time there was an error with the yellow code, it caused us a lot of trouble.

> Residents claim they are healthy, but the yellow code tells us they have an issue. Whom should we believe—the residents or the potentially flawed system?
>
> (RC staff 8)

Not only that, but during the strictest lockdown, frontline workers had to make decisions that went against their own moral beliefs. A big white painfully recalled that experience: “At the time, I put a seal on the door of a single mom's house who had a kid with asthma, because the mom got infected. I can't sleep when I think about it, and I feel like a monster.” (Volunteer 5).

In such situation, frontline workers increasingly privileged local relationships over abstract rules. According to the interviewing data, 70% of the frontline workers admitted falsifying records to aid vulnerable residents, while almost all of the interviewed workers prioritised "visible human needs" over algorithmic directives. This choice brought them another ambivalence. RC staff 7 articulated: "My welfare comes from the state, but my conscience answers to neighbour next door—when they conflict, which 'duty' do I betray?". In such situation, state accountability demanded procedural purity ("Follow the code, always"), while the community accountability required situated judgment ("See the person, not the alert"). Under the constant pressure of these factors, frontline workers (RC staff and volunteers) reported heavy emotional burden:

| Symptom | Prevalence | Primary Trigger Mentioned |
|---|---|---|
| **Chronic insomnia** | 66% | Conflicting enforcement mandates |
| **Situational anxiety** | 54% | Health code malfunctions |
| **Identity dissonance** | 54% | State vs. community loyalty clash |
| **Mental injury** | 73% | Residents' abuse and misunderstanding |

Table 6-2 Frontline Workers' Emotional Symptoms and Triggers

Source: Community Emotional Survey Questionnaires for Frontline Workers, Nov, 2023; Participants Interviews

### 6.3.2 Residents Anxiety

The collapse of socio-material alliances (Müller, 2015) plunged residents into profound insecurity – a fundamental crisis of trust in the systems designed to protect them. As policy ambiguities multiplied and technological infrastructures decayed, the once-predictable boundaries between safety and risk dissolved.

Policy volatility created tangible physical insecurity, particularly for medically vulnerable residents navigating contradictory containment protocols. The experience of a 68-year-old diabetic resident illustrates this: “When quarantine shifted from 21 to '14+7' days, nobody updated my building's sensor system. The alarm kept blaring on day 16 though policy said I was free.” (Residents F8M1) Similarly, Resident F7M1’s protest captured disconnection:

> "Precision prevention? They sealed our whole building for one case! When I showed the State Council notice, big white said that there were no clear instructions on how to implement the new notice, so ‘to be on the safe side,’ they would still follow the previous requirements.”
>
> (Resident F7M1)

Abstract terms like "precision prevention" became contested concepts without material anchors. Sensors calibrated for 21-day quarantines malfunctioned under revised timelines, turning protective devices into sources of entrapment. Consequently, residents developed anticipatory dread toward policy announcements. As a resident noted: "Every 'optimised guideline' meant weeks of chaos—would door sensors work? Would medicine arrive? We stopped trusting words on documents." (F7M1).

Simultaneously, decaying technological infrastructures transformed health tools from instruments of protection into sources of uncertainty. As a resident argued:

> “When the community data dashboard froze for weeks, rumors spread about hidden outbreaks. My grandson said 'Ignore gossip,' but no one knows what the actual situation is like. We have always relied on dashboard, but now that data is gone. What else can we do but be afraid?”
>
> (Resident F3M3)

The frozen dashboard—once a "spokesperson for community risk"—created informational voids filled by anxiety.

The convergence of policy and technological instability ruptured communal trust, replacing collective solidarity with individualized survival strategies. A young mother confessed: "When my toddler developed fever during 'precision prevention,' I hesitated to report. Last time our building was sealed for a false alarm. Neighbours glared for weeks—would they blame us again?"(Resident F2M1). Her neighbour confirmed this moral shift: "Before, we reported symptoms to protect everyone. Now? We see ambulances and draw curtains. Better silent than the 'plague bringer.'" (Residents F3M1).

This reflects shared accountability requires stable socio-material alliances (Müller, 2015). When policy devices (quarantine seals) and informational actors (dashboards) malfunctioned, the moral imperative of "collective containment" fragmented. Residents weren't abandoning solidarity but responding to broken feedback loops—reporting symptoms no longer triggered predictable, reliable community protection.

These resident experiences reveal policy ambiguities created material vulnerabilities ("14+7" quarantines with 21-day sensors), while technological decay produced epistemological voids (frozen dashboards, glitched health codes). Crucially, these failures were interconnected: policy shifts without device recalibration bred distrust, which then fractured communal accountability. Yet within this void, the seed of reassembly is observed. When big whites manually delivered diabetic's insulin during sensor failures, or when building representatives organised a building-wide symptom reporting alternative after dashboard collapse, they weren't just coping—they were pioneering relational accountability. Their anxiety didn't paralyze but activated ethical improvisation, foreshadowing Section 6.4's grassroots reassemblies.

### 6.3.3 Reflexive Ethics: Accountability as Relational Reassembly

The preceding analysis of emotional burdens reveals accountability not as static compliance but as a dynamic actor-network phenomenon—continuously reconstituted

through affective negotiations between human and non-human actors. This section synthesizes frontline distress and resident anxiety through ANT's core premise: accountability emerges relationally through reflexive engagements with ruptured socio-material alliances (Müller, 2015), where affective labour becomes the essential medium for ethical reassembly.

Moral conflicts among frontline workers demonstrate how accountability transforms from rule-following into relational bricolage when systems fail (Mol, 2008). The insulin delivery dilemma epitomizes this shift: when the health code flagged the diabetic as 'high-risk' during a system glitch, RC staff faced three choices: follow the red code[4] (possible danger to residents' live), override protocols (lose job), or invent a third path. So staff recorded his insulin as 'medical delivery'—technically true, ethically necessary. They organised the daily scheduled delivery of insulin to the floor where the resident is located, and requested that volunteers send confirmation delivery photos to the RC staff responsible for the building. Also, big whites reframed containment: "Sealing doors felt like violence. So we turned quarantine into care. We sent a message in the WeChat groups: During the quarantine period, please contact the floor rep and big whites for delivery of supplies." (Volunteer 2)

These actions embody logic of care (Mol, 2008): accountability reconstituted through situated improvisation rather than procedural fidelity. ANT clarifies this as re-translation: when obligatory passage points (like health codes) fracture, actors reassemble actor-networks through alternative mediators (Callon, 1986; Latour, 2005). The affective impulse—Staff's guilt, Volunteer's compassion—becomes the interessement binding new alliances. Thus, distress functions as ANT's mediator: moral pain doesn't paralyze but mobilises ethical innovation, transforming frontline workers from rule-executors into actor-network weavers.

Similarly, when formal systems failed, residents' anxiety drove accountability reassembled

[4] Within China's Health Code system, "following the red code" was a strict, mandatory public health directive. An individual assigned a "red code" was algorithmically identified as high-risk—e.g., a confirmed COVID-19 case, a close contact of a confirmed case, having travelled from a high-risk area, or being within a mandated isolation period. This status prohibited them from entering public spaces, using public transport, or moving freely. At the community level, it triggered immediate home or centralised quarantine, often enforced by the affixing of physical quarantine seals or electronic monitoring devices to their residence. The policy's objective was to sever chains of viral transmission. Violating a "red code" mandate could result in legal or administrative penalties.

hrough reflexive, community-based actions. In this process, their affective judgments—rooted in trust and mutual care—took place over failing formal protocols. Residents' response to the frozen community data dashboard illustrates this:

> "When case numbers disappeared, we created our own 'symptom map' in Building's WeChat group. We reported on the health status of our own families and provided whatever assistance we could to families with infections. We didn't wait for officials—we became each other's early-warning system."
>
> (Resident F6M1)

Anxiety thus operates as one of the focal actors (Callon, 1986; Latour, 2005): it forces actors to reflexively reassemble protection actor-networks from available socio-material fragments, making accountability inherently relational and affective.

These processes reveal accountability's hybridity—a continuous co-production between policy infrastructures, technological actants, and human emotional labour (Latour, 2005; Mol 2002). Consider the evolution of quarantine enforcement: Initially, door sensors (non-human actors) enforced compliance automatically. As policies shifted to "precision prevention," RC staff 6 described their recalibration: "When sensors malfunctioned under new timelines, we stopped fighting residents. Instead, we negotiated daily check-in times—their convenience, our reassurance." This evolved further when diabetic's sensor failed: "Big whites organised 'insulin shifts,' texting me delivery photos. I confirmed these photos every day" (RC staff 6). Here ANT's hybrid agency in action is witnessed: policy (changing quarantine rules) initiated rupture; technology (malfunctioning sensors) disabled old enforcement; affect (insulin shifts) generated new accountability forms. The resulting hybrid—part digital documentation (photos), part relational pact (check-ins)—demonstrates how accountability reassembles through affective alignment between humans and non-humans.

Thus, what appears as "rule-breaking" is actually actor-network maintenance: actors sustaining accountability by reweaving sociomaterial alliances around shared affective priorities (care, trust, survival). This reflexive reassembly carries theoretical implications: accountability functions not through stability but through continuous affective translation

of ruptures (Boedker and Chua, 2013).

The emotional burdens chronicled in this section reveal an ANT insight: affect is not external to actor-networks but the medium through which alliances form, fracture, and reconfigure (Latour, 2005). The community's suffering stemmed not merely from pandemic dangers but from the moral vacuum created when the OPP of "collective containment" dissolved without ethical succession. Yet within this vacuum, reflexive ethics emerged—not as top-down principles but as situated practices forged through shared distress. When algorithms failed and policies wavered, it was human anguish that reassembled ethical frameworks.

This reconfiguration carries crucial implications: if accountability emerges from emotional negotiations, then governance systems must design for affective resilience. The grassroots innovations documented next in Section 6.4 didn't resolve this tension but channeled it into new sociomaterial alliances—even fractured actor-networks reassemble through the weight of human care.

## 6.4 Reassembling Accountability–Disobedience, Improvisation, and Grassroots Reconfiguration

The preceding analysis of emotional burdens has established that accountability, when stripped of its formal institutional scaffolding, transforms into a reflexive and relational practice. Section 6.3 examined this transformation primarily through the internal affective landscape of actors—the moral distress of enforcers and the anxiety of residents. It revealed how affective impulses became the medium for ethical reassembly when systems failed. Building on this foundation, this section now turns from the internal, affective motivations for reassembly to the external, observable practices. It traces how residents' disobedience, frontline staff's improvisations, and the emergence of informal support actor-networks materially reconfigured the accountability system. In doing so, the analysis moves from establishing why reassembly occurred to detailing how it was accomplished on the ground.

### 6.4.1 Disobedience as Re-Translation: Contesting Algorithmic Authority

As policy coherence deteriorated, residents' resistance evolved from passive neglect to nuanced renegotiation of accountability boundaries. Rather than overt confrontation, community developed subtle workarounds that destabilised the obligatory passage point (OPP) of algorithmic governance.

Following the previously noted bugs and limitations of the official health code system, building representatives and residents in some buildings adopted supplementary health logs. Under the health code system, individuals returning from outside their city or province were automatically assigned a "Yellow Code," designating them as unsuitable for contact beyond their household. However, residents began sharing their own thermometer readings and nucleic acid self-test results within community WeChat groups to demonstrate their health status. Based on these "manually-verified" information, deliveries of food and daily necessities proceeded normally to these households, bypassing the restrictions imposed by the health code system. This supplement didn't reject containment logic but reclaimed agency from malfunctioning system. As one RC staff stated:

> "People must live their lives, ... With the pandemic ongoing for two years without a clear end, we cannot indefinitely prevent individuals who have travelled from accessing essentials, ... Do people with yellow codes not need to eat or live?"
>
> (RC Staff 3)

Morever, flexibility of the details helped to circumvent the standardised algorithms and regulations. Under the health code system, a "Red Code" mandates absolute isolation, permitting only restricted delivery of "essential medications and basic necessities" to quarantined individuals. However, when an 82-year-old resident in Building A (living alone) received a red code following diagnosis, his daughter delivered meals almost daily. She explained:

> "My elderly father lacks self-care capacity, including cooking... Besides, he is

> ill and must eat more healthily, ... My neighbours know that I bring him meals every day, and they understand, ... every family has elderly members, ... and they have a good relationship with my father. Though these delivery may violate protocols, ‘big white’ recorded these as 'medication deliveries', exploiting the permitted provision of essential medications. I am especially grateful to this."
>
> (Resident F6M1)

These observed adaptations constitute not mere rule-breaking but reconfigurative disobedience within the actor-network, exemplifying what de Certeau (1984) theorised as "tactics of the weak." Rather than dismantling systems, residents diverted institutional flows through three key mechanisms: first, health codes transformed from rigid control instruments into negotiable boundary objects. As demonstrated when residents repurposed WeChat logs to contest Yellow Code restrictions, the digital identifier’s meaning became fluid , renegotiated through communal verification of thermometer readings and test results. Second, where state protocols mandated absolute isolation for red code holders (e.g., permitting only medicine deliveries), kinship obligations and communal trust generated alternative accountability circuits. The daughter’s daily meal deliveries to her infected father—disguised as "essential medication delivery" by “big white”(Resident F6M1)—revealed how algorithmic governance splintered under localised ethical pressures. Third, accountability underwent situated re-translation. The abstract risk assessment of digital platform has been replaced by relationship-based ethical connections. Neighbours’ tacit endorsement of rule-bending ("they have a good relationship with my father") and staff’s discretionary record-keeping relocated authority from databases to social networks.

### 6.4.2 Staff Improvisation: Rebuilding Actor-Network Through Pragmatism

As digital infrastructures decayed, frontline workers realised that they cannot rely entirely on systems that may fail or malfunction. Therefore, they reinvented their roles through socio-technical bricolage—weaving low-tech solutions and moral reasoning into alternative accountability circuits. This adaptive labour transcended mere coping

mechanisms, generating interconnected actor-network restructuring and supplementation.

*The Materiality of Trust: Paper Protocols as Boundary Objects*

Confronting unreliable health codes, RC staff engineered the "Handwritten Diary" protocol—a manual risk-assessment system leveraging physical artifacts to rebuild trust. Residents submitted handwritten symptom/travel disclosures, verified through neighbour testimonials rather than algorithmic validation. The resultant handwritten "Community Green Stickers" (materialising collective endorsement) functioned as boundary objects reconciling state mandates with local realities. As RC Staff 6 attested, when a chronic disease patient in the community was flagged with a red health code after going to the hospital for a regular check-up, the sticker declaring "Vetted by RC, Permit granted on humanitarian grounds" secured compliance even from stringent security personnel (April 2023). This subversion repurposed bureaucratic materiality—paper forms became conduits for communal moral authority, displacing digital surveillance with socially embedded verification.

*Embodied Accountability: Care Infrastructure as Governance*

Frontline actors reconceptualised accountability by integrating welfare into enforcement protocols. For example, during the quarantine of an elderly diabetic, RC workers partnered with volunteers to establish:

(1) Guaranteed daily insulin deliveries: the resident's insulin was delivered daily by his family members to the lobby of his residential building, where it is then transported by a designated big white to his doorstep.

(2) Provision of non-internet-dependent glucose monitors: proactively identifying that the resident's self-supplied blood glucose monitor required Wi-Fi connectivity, RC staff mobilised the community WeChat group to source non-internet-dependent alternatives, thereby guaranteeing autonomous daily monitoring at home.

(3) Manual recording and care: the big white which provides daily insulin delivery, established a small WeChat discussion group with the resident and their families to ensure that residents could seek immediate help from staff at any time. (Event from RC logs, December 2022)

This transformed containment from digital surveillance (sensors and codes) into a

care-based circuit where, accountability centered on embodied realities, as RC staff 6 articulated, : "Did patients in isolation get his medicine? Does he feel cared for?" Crucially, this reconfiguration relocated responsibility from platforms to people—the insulin syringe and glucose monitor became tangible accountability devices. By embedding governance within kinship-like obligations, workers generated what Tronto (2020) terms "responsiveness ethics," where systemic failure triggered moral innovation rather than procedural abandonment.

These collective actions reveal pandemic governance as more than state-directed containment—it became community-driven reassembly. Frontline workers emerged as practical innovators, repurposing everyday resources to rebuild trust: handwritten diaries and glucose monitors transformed into trust anchors; neighbour testimonials and peer monitoring turned social ties into tools for cooperation; moral judgments about humanitarian exceptions created new legitimacy. This organic reconfiguration achieved what failing digital systems could not: accountability became relational, rooted in human connections rather than algorithms. It grew embodied, grounded in lived experience instead of abstractions. Most importantly, it stayed negotiable—adapting to real needs rather than enforcing rigid absolutes.

### 6.4.3 Informal Support Networks: The Solidarity Assemblage

Beyond formal governance mechanisms, residents collaborated with front-line staff to establish grassroots support networks. These were not acts of resistance but creative reassemblages of accountability—grassroots eco-systems where care and cooperation replaced crumbling bureaucracy. The emergence of the informal support networks represents a significant instance of "problematisation from below." While the in the first stage (ch. 5), official governance network defined the primary problem as "virus containment," the residents, facing supplies shortages and medical delays, redefined the problem as "survival and care." This divergence in problematisation led to the formation of a emergent actor-network. The informal support network did not seek to overthrow the official structure but sought to bypass its blocked arteries. By establishing their own solutions (e.g. mutual aid groups, digital bridges), they aligned the diverse interests of

anxious parents, and immobilized elderly into a network of reciprocal exchange.

*"One building is one family": Neighbourhoods as Living Infrastructure*

Due to the fluctuating pandemic situation and quarantine policies, residents were often restricted to the space of their own homes. As a result, connections within the same building became even closer. One resident recalled:

> "At that time, each building had its own WeChat group, ... We talked about everything in the group. Sometimes we shared our supplies, such as garlic. If someone needed garlic and someone else had extra, they would leave it outside their door, and neighbours would go upstairs or downstairs to get it. In exchange, they would share food they had made themselves. Sometimes we just chatted idly in the group. Everyone was bored stiff and wanted to talk to someone."
>
> (Residents F4M1)

The responsibilities of the building representatives (see section 5.4) have become more diverse. They spearheaded the installation of shared medicine baskets in building lobbies—residents voluntarily contributed surplus antivirals for communal redistribution. This peer-managed system operated through transparent WeChat verification: donors documented contributions photographically ("A box of Banlangen added; take if needed"), while recipients acknowledged withdrawals and offered reciprocal aid ("Took fever reducers; have spare cabbage if required").

Most crucially, building representatives operated 24/7 emergency hotlines using nothing more than basic phones and bicycles. Their effectiveness became undeniable during the December 2022 surge. As one resident states:

> "Our building representative delivered antivirals to eight households in 2 hours, ... We collectively purchased dozens of boxes of Banlangen and fever-reducing medicine, but when the supplies were delivered to the entrance

> of our community, we couldn't all go out to pick them up. It was all thanks to the big white and the floor rep. They first transported the supplies to the bottom of each building by bicycle, and then the floor rep delivered them door to door. It was so hard work."
>
> (Residents F6M1)

The spatial constraints of pandemic lockdowns catalyzed local solidarity within residential buildings. Leveraging WeChat groups as digital coordination platforms, residents established self-organised systems for resource sharing (e.g., medicine baskets with photographic accountability protocols). Building representatives expanded their roles into 24/7 crisis responders, bridging logistical gaps through limited mobility (bicycles) during supply chain disruptions. This embodied ANT's hybrid agency (Latour, 2005): human ingenuity (door-to-door deliveries) and non-human tools (WeChat verification) synergized to overcome systemic failures.

*The Digital Bridge for the Elderly*

A significant challenge emerged for the community's elderly population (estimated at 18% of residents), many of whom struggled with the abrupt digitisation of essential services – ordering groceries, accessing health codes, reporting symptoms, or booking government food deliveries. While family support existed, physical separation during lockdowns rendered this insufficient. Recognising this digital divide, younger residents, coordinated primarily by building representatives, initiated the technology support for the elderly.

Building representatives first surveyed elderly residents' specific needs and device types (predominantly basic smartphones). Volunteers (recruited community-wide) were then matched to elderly residents, often within their own building or adjacent ones. Support was delivered through multiple channels: simple step-by-step visual guides (photographs and large-font text) printed and delivered door-to-door for common tasks; dedicated 1:1 WeChat voice call support lines operated by volunteers; and sent voice messages via WeChat to explain and teach, making it convenient for the elderly to listen and learn repeatedly.

Crucially, volunteers often became proxies, using secure methods to assist with critical online tasks. For instance, a volunteer could guide an elderly person via video call to point their phone camera while the volunteer remotely filled out a complex health status form screen-by-screen. Floor reps managed the logistics of printing and delivering physical guides and assisted with device charging or troubleshooting. The profound impact is captured by one elderly resident:

> "Before, I felt completely lost. My phone was just a useless brick. Then Xiao Wang (the floor rep) brought these big pictures showing me what buttons to press, step by step. And young Miss Chen from downstairs would call me every morning: 'Auntie, need help today?' She once spent an hour on the phone helping me get that green health code so the doctor could visit. It wasn't just about the phone; it meant I wasn't forgotten, I wasn't alone."
>
> (Resident F4M2)

This mutual support network illustrates the hybrid agency central to ANT (Latour, 2005). The assemblage integrated human actors (volunteers, reps, elderly residents), digital tools (WeChat, apps), and physical artefacts (printed guides) to overcome systemic exclusion, ensuring the elderly remained integrated within the community's support infrastructure during its most challenging period.

These networks reveal truths about community resilience. First, systems thrive on disturbance. The collapse of formal structures allowed residents to reframe the crisis itself—from "How do we contain the virus?" to "How do we care for each other?" Second, accountability regenerates through action. Moral authority migrated from digital surveillance to tangible acts—the medicine delivered, the doorbell answered, the neighbour checked upon. Paper stickers and shared meals became stronger legitimacy markers than any official health code. Finally, non-human actors were powerfully re-entangled. Low-tech tools—bicycles, paper ledgers, medicine baskets—became vital connectors. They materialised trust where high-tech systems failed, proving that sophisticated solutions often pale beside simple, human-centered adaptations.

By mid-2023, a new ecosystem had taken root in the community—one where accountability flowed through hands delivering insulin, spreadsheets tracking outbreaks, and teenagers answering elders' calls. In binding neighbours through acts of mutual care, these networks achieved what top-down mandates never could: they made solidarity tangible, durable, and human.

## 6.5 ANT Analysis: Controversy, Re-Translation, and Heterogeneous Reassembly in Actor-Network Transformation

The grassroots reassemblies documented in Section 6.4 were not merely adaptive responses to systemic failure. Rather, they were sites of controversy where the meaning and mechanisms of accountability were contested and renegotiated. Building on this empirical evidence, this section returns to the core theoretical framework of ANT to analyse how these conflicts acted as important moments for actor-network re-translation. Drawing on ANT, it argues that the friction observed in the community—over policy misalignments, algorithmic authority, and care priorities—functioned as generative obligatory passage points (OPPs) (Latour, 2005; Callon, 1986). It was through these controversies that heterogeneous actors were compelled to redefine problems, enrol unexpected resources, and finally reassemble new configurations of accountability.

### 6.5.1 Controversy as Obligatory Passage Point

The documented policy-device misalignments and algorithmic rebellions functioned as critical OPPs (Latour, 2005; Callon, 1986) where controversies forced collective redefinition of accountability, dismantling the original OPP of "containment" and establishing new socio-material configurations.

The quarantine sensor crisis (Section 6.2.1) exemplifies this transformation. When national policies shifted to "14+7" quarantine durations, physical sensors calibrated for 21-day lockdowns became materially discordant with new protocols. WeChat group's August 2021 protest—"The rules say 14+7! Why is this sensor still on my door after day 16? Are you

inventing your own laws?"—crystallised the controversy. These devices, once uncontested "shackle" of protection (Section 5.3.1), were reframed as instruments of outdated coercion. By December 2022, households collectively refused sensors, arguing they violated "precise prevention" principles (RC Compliance Logs). Crucially, RC staff avoidance of confrontations—reported letting minor violations go unchecked (staff Wechat group historical messages)—signaled tacit alliance with residents.

As Latour (2005) observes, when technologies malfunction, they cease being black boxes and become visible sites of political negotiation. The sensors' material persistence beyond policy timelines exposed the infrastructural inertia binding human and non-human actors. Consequently, the controversy dissolved the top-down OPP of "containment," forcing passage through a new junction where human discretion mediated technological authority—a transition embodied in RC Staff 2's lament: "Before, red code = seal door. Now? We debate 'low-risk' vs. 'high-risk' for hours".

Similarly, the health code mutiny (Section 6.4.1) reconfigured epistemic authority through controversy, transforming abstract algorithms into contested boundary objects. This controversy erupted when residents confronted the health code system's fundamental limitations. As described in 6.4.1, residents returning from travel faced automatic yellow-code designation despite being healthy. Building representatives and residents responded by creating supplementary electronic health logs—sharing thermometer readings and nucleic acid self-test results in WeChat groups. This "manual verification system" enabled essential deliveries to continue, directly circumventing algorithmic restrictions. This peaked when Resident F6M1 defied her father's red-code status: "My elderly father lacks self-care capacity... Though deliveries violate protocols, 'big white' recorded these as 'medication deliveries'." These actions exposed how kinship obligations could fracture algorithmic authority.

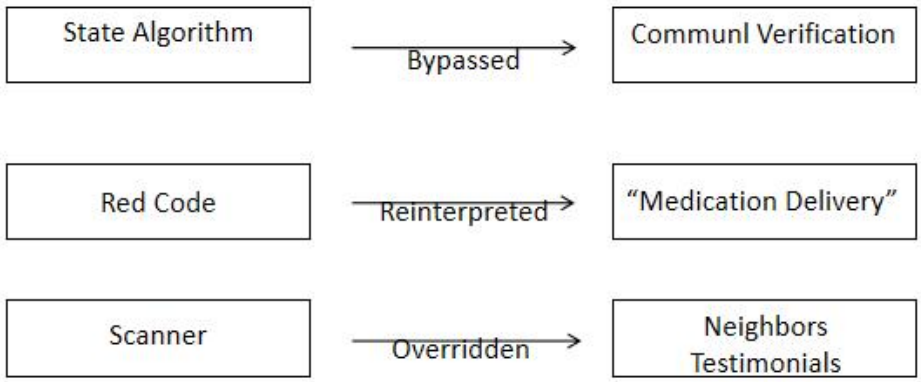


Figure 6-1 : Reconfiguring Accountability Through Community-Based Verification

ANT reveals this as re-translation process (Latour, 2005; Callon, 1986):

(1) problematisation: Health codes transformed from unquestionable directives (Section 5.3.1 "second ID") to negotiable boundary objects (Star and Griesemer, 1989). Residents reframed them as flawed tools requiring communal supplementation.

(2) Interessement: New alliances formed through - human actors: building representatives becoming validators; non-human actors: WeChat groups serving as verification platforms, self-test kits gaining evidentiary status.

(3) Re-purposing: Accountability relocated from centralised algorithms to distributed actor-networks.

This controversy relocated accountability from centralised databases to distributed social networks, exemplifying Latour (2005)'s principle that controversies don't destroy networks—they redistribute agency. The outcome manifested materially through handwritten "Community Green Stickers" that bypassed digital systems. Collectively, these prove Callon's (1986) thesis: obligatory passage points are dynamic achievements, not static fixtures. The policy-device and algorithmic controversies transformed governance from a rigid machine into a negotiated ecology. This renegotiation constitutes ANT's insight: actor-networks stabilise not through harmony, but through the generative friction of controversy.

### 6.5.2 Heterogeneous Engineering in Reassembly

The actor-network's regeneration relied on what Law (1992) terms heterogeneous engineering —the strategic enrolment of human and non-human actors into new configurations that stabilised contested realities. This process transformed mundane objects into potent mediators of accountability through three material-semiotic evolutions documented in Sections 6.2-6.4.

*Policy Documents as Weapons of Resistance*

The trajectory of paper artifacts exemplifies Latour's principle that "technologies are society made durable." During the building lockdown controversy (Section 6.2.1), residents weaponized State Council notices against municipal directives: "The State Council says lockdowns should be 'precise,' but you sealed whole building because of one case? Where's the precision?" (November 2022 WeChat message). The protest enrolled printed policies as the material witnesses — physical documents contradicting local enforcement and the boundary objects — texts interpretable as state authority (by staff) vs. resident rights (by residents). In this situation, paper's agency shifted from transmitting top-down commands to facilitating horizontal negotiations. The dissenting residents became heterogeneous engineers, transforming state texts into tools for reassembling governance from below.

*Health Logs as Epistemic Counterweights*

The health code mutiny (Section 6.4.1) witnessed handwritten logs displacing algorithmic authority through deliberate enrolment:

(1) Neighbour witnesses authenticated bodily realities ("I saw my neighbour's negative test")

(2) Building representatives curated WeChat verification threads

(3) RC Staffs overrode scanners using PCR test printouts

This alliance repurposed low-tech materials as epistemic correctives:

| Non-Human Actor | New Semiotic Role | Human Alliance |
|---|---|---|
| Handwritten logs | Relational trust anchors | Neighbour validators |
| Thermometer readings | Embodied truth claims | Building representatives |
| Self-test kits | Community-certified evidence | Big Whites |

Table 6-3: New Alliances and Semiotic Roles of Non-Human Actors

The "green sticker system" (Section 6.4.2) institutionalized this, transforming stickers from bureaucratic labels into moral currencies backed by communal witnessing. Here, heterogeneous engineering achieved what Star (2010) calls boundary infrastructure: paper tools bridged state protocols and lived realities.

*Medicine Baskets as Care Registries*

The insulin delivery crisis chronicled in Section 6.4.3 also catalyzed a material-semiotic transformation, repurposing ordinary medicine baskets into vital vulnerability registries. Initially serving as passive containers in building lobbies, these baskets acquired agency through three processes. First, donor inscriptions (Akrich, 1992) like photographic WeChat messages announcing "A box of Banlangen added; take if needed" transformed simple contributions into communal promises. Second, recipient counter-gifts such as "Took fever reducers; have spare cabbage" established visible reciprocity networks. Third, the supervisory labour of building representatives systematically tracking contributions and needs institutionalized collective stewardship.

This reassembly operated through distinct ANT mechanisms: baskets underwent semiotic enrichment as they evolved from storage units into ledgers of mutual care; the actor-network expanded through enrolment of big white as emergency couriers; and moral frameworks shifted as the ethos of "take if needed" replaced bureaucratic deservingness with embodied solidarity.

The evolution of paper documents, health stickers, and medicine baskets demonstrates how material agency emerges contingently through conflict and reconfiguration. Policy PDFs gained potency only when dissenting residents weaponized them against quarantine seals. Green stickers functioned as trust anchors because they bore neighbour authentication that countered algorithmic authority. Medicine baskets became living registries through the public accounting of WeChat photos and reciprocal gift declarations—their power deriving not from inherent properties but from collective enactment.

### 6.5.3 Re-Translation Cycles: From Disintegration to Reassembly

The community's journey re-maps onto Callon (1986)'s four translation moments, but as

iterative cycles rather than linear progression:

| | Cycle 1: Policy-Device Rupture | Cycle 2: Algorithmic Failure | Cycle 3: Care Infrastructure |
|---|---|---|---|
| **problematisation** | "Why do sensors outlast policy timelines?" | "Who defines risk when codes lie?" | "How to deliver insulin under red codes?" |
| **Interessement** | Residents + RC staff forming "duration audit teams" | Creating verification protocols | Big Whites redefining |
| **Enrolment** | refusal of outdated seals | Residents adopting paper-based alternatives | Door-to-door delivery |
| **Mobilisation** | Customized quarantine agreements | Community recognition of handwritten logs > health codes | Formalized vulnerability registries |

Table 6-4: Translation Moments as Iterative Cycles in Actor-Network Reassembly

The iterative re-translation cycles documented in this table reveal Callon (1986)'s sociology of translation not as linear progression but as recursive adaptation—where each resolution generates new controversies demanding further reassembly. The first cycle (Policy-Device Rupture) began with residents' material resistance to outdated quarantine sensors ("Why do sensors outlast policy timelines?"), enrolling RC staff through their operational withdrawal to co-create customized quarantine agreements. Yet this solution overflowed into Cycle 2 (Algorithmic Failure): liberated from sensors, the community confronted epistemic voids when malfunctioning health codes falsely branded residents as risks. Here, handwritten logs emerged as boundary objects reconciling bureaucratic categories with embodied realities—a mobilisation achieving what digital systems could not: communal recognition of neighbour-verified records over algorithmic scores.

Crucially, these cycles layered moral complexity. When Cycle 3 (Care Infrastructure) asked "How to deliver insulin under red codes?", it exposed how prior technical fixes remained insufficient for ethical crises. Big Whites' redefinition of "medicine" to include meals wasn't rule-bending but ontological reengineering—expanding state-mandated

protocols to encompass kinship obligations. The vulnerability registries formalized through this process materialised the local universals: abstract accountability became tangible through insulin delivery routes and medicine baskets.

This cycle structure confirms ANT's insight: actor-network stability is not an endpoint but a continuous achievement (Latour, 2005). Each controversy's resolution—sensor refusal, health code supplements, care protocols—became the obligatory passage point for the next ethical challenge (Callon, 1986). The community's reassembly advanced not by eliminating friction but by transforming it into the infrastructure of trust—where big whites carried insulin, paper logs bore witness, and solidarity was measured in shared cabbage rather than green codes.

## 6.6 Conclusion

This chapter has traced the trajectory of the pandemic governance actor-network as it navigated a phase of destabilisation and contentious reassembly. The gradual disintegration of the initial crisis-forged assemblage—once stabilised under the imperative of "collective containment"—was precipitated by the converging pressures of ambiguous policy shifts ("Precision Prevention"), decaying socio-technical infrastructures (malfunctioning health codes, discordant quarantine seals), and pervasive actor fatigue that eroded both operational coherence and moral legitimacy. Rather than culminating in chaotic collapse, however, this dissolution catalyzed a generative process of reflexive reassembly, wherein heterogeneous actors—frontline enforcers navigating moral anguish, residents confronting ontological insecurity, and even repurposed mundane artifacts—improvised alternative configurations of accountability through situated practices of care, solidarity, and pragmatic adaptation.

The analysis reveals that the actor-network's unraveling was neither terminal nor random; it stemmed fundamentally from the interruption of the continuous translation processes necessary to sustain the obligatory passage point (OPP) of "algorithmic containment." Policy ambiguities transformed clear mandates into contested boundary objects, while technological failures dissolved the algorithmic shields legitimising enforcement and

severed vital feedback loops. Human exhaustion—manifested in RC staff avoidance, volunteer attrition, and resident disillusionment—signaled the disintegration of interessement bonds. Crucially, these disruptions did not merely create operational voids but exposed the inherent fragility of accountability networks reliant on rigid sociomaterial alliances incapable of adaptive re-translation.

Yet within this suspended disintegration, controversies over policy-device misalignments and algorithmic authority—from quarantined residents demanding sensor removals aligned with revised timelines to families defying red codes to deliver essential care—functioned not as endpoints but as catalytic obligatory passage points. These moments of friction forced collective redefinition, dismantling the crumbling OPP and compelling actors into reflexive ethical labour. It was through these contested junctures that accountability underwent fundamental re-translation: exhausted frontline staff, grappling with moral distress, wove low-tech bricolage (handwritten logs, paper stickers) and relational care (negotiated insulin deliveries, vulnerability registries) into hybrid governance forms. Disillusioned residents, navigating eroded protections, reassembled localized systems of mutual aid—transforming WeChat groups into communal symptom maps, medicine baskets into solidarity ledgers, and bicycles into vital care infrastructure. Affect emerged not peripherally but constitutively as the essential medium binding these new sociomaterial alliances, transforming accountability from a top-down mandate into an embodied, relational practice rooted in situated ethics.

This underscores the stability of actor-networks is provisional, contingent upon the continuous translation of disturbances into opportunities for reassembly. The community's pandemic governance did not revert to its original form, it became a fluid and resilient ecology. Responsibility flowed through the tangible acts of delivering medicine, the shared trust inscribed in paper ledgers, and the embodied commitment of neighbours answering calls for help. Accountability, therefore, reveals itself not as a fixed structure but as an emergent, fluid property arising from the dynamic, often contentious, negotiations between heterogeneous actors navigating the breakdown and reassembly of their shared socio-material world.

# Chapter 7: Discussion – Accountability as Fluid Governance

## 7.1 Introduction

Based on the empirical journey detailed in Chapters 5 and 6, this chapter synthesises the core findings to address the central research aim of this thesis: to conceptualise and trace accountability as an emergent, socio-material practice through the lens of Actor-Network Theory (ANT).

Chapter 5 illustrated how heterogeneous actors, including residents, community workers, health codes, quarantine seals, and digital platforms, were problematised, interessement, enrolled, and mobilised into a cohesive actor-network under the obligatory passage point (OPP) of "collective containment". This network achieved provisional stability through hybrid configurations of material enforcement, moral re-education, and affective alignment. However, as Chapter 6 revealed, this stability proved fragile. Policy shifts, technological decay, and actor fatigue precipitated the actor-network's disintegration, leading to ethical controversies, emotional distress, and operational voids. Yet, rather than culminating in chaos, this dissolution catalysed a phase of grassroots reassembly, where accountability was reconstituted through practices of care, solidarity, and pragmatic adaptation.

This chapter draws on these empirical insights to respond to the research questions guiding this study: (1) How is accountability performed and distributed through actor-networks in everyday community practices?; (2) How do human and non-human actors assemble and negotiate responsibilities?; and (3) What do these processes reveal about the nature of governance under conditions of crisis and uncertainty?

It argues that accountability is a socio-material performance, continuously accomplished through rituals, routines, and resistances, and that responsibility is consistently displaced across time, actors, and affects. In doing so, the chapter highlights the value of ANT in revealing the mundane, affective, and material dimensions of governance, challenging

reductive binaries of “state control” and “citizen compliance”, and offering critical implications for public sector governance and accounting studies.

The discussion is structured as follows. Section 7.2 develops the core argument that accountability is a performative effect rather than a possessed attribute, emphasising the constitutive role of non-human actors and the significance of resistance and re-performance. Section 7.3 examines the fluid and distributed nature of responsibility, tracing its displacements across temporal phases, actor types, and affective intensities. Section 7.4 reflects on the theoretical contributions of ANT in uncovering the often-overlooked dimensions of governance. Section 7.5 rethinks conventional notions of state control and citizen compliance, recasting them as networked achievements. Section 7.6 outlines implications for critical accounting and public sector governance studies, highlighting how ANT extends into crisis contexts.

## 7.2 Accountability as a socio-material accomplishment—performed, not possessed

This thesis set out to conceptualise and trace accountability not as a static attribute or a normative ideal, but as an emergent, socio-material practice enacted through the dynamic associations of human and non-human actors. Drawing on ANT, the empirical findings from Chapters 5 and 6 demonstrate that accountability is not something actors have, but something they do, which is a continuous accomplishment performed through everyday practices, material arrangements, and affective engagements. This section synthesises these findings to argue that accountability is a socio-material performance, constituted through the ongoing translation of interests, the enrolment of actors, and the stabilisation of actor-networks in response to evolving crises.

### 7.2.1 From Static Attribute to Performative Effect

The literature review in Chapter 2 highlighted the extensive academic debate surrounding accountability, often framing it within principal-agent models (Mulgan, 2000; Bovens, 2007) or contrasting 'calculative' with 'narrative' forms (Baker, 2014; McKernan and McPhail, 2012). Predominant discourses, especially in public sector and disaster

management contexts, often treat accountability as a commodity: something to be discharged, demanded, or possessed, frequently through formal reports and numerical data (Sinclair, 1995; Taylor et al., 2014; Sargiacomo et al., 2014). This reification is evident in critiques of government pandemic responses that focused on statistical reporting (testing figures, mortality rates) as the primary mode of demonstrating competence and answerability (Ahrens and Ferry, 2021; Ahmad et al., 2021; Yu, 2021). Even calls for greater ethical consideration often presuppose a static model where 'better' accountability can be 'applied' (Messner, 2009; Everett and Friesen, 2010). However, such approaches tend to overlook the mundane, material, and often contested processes through which accountability is realised in practice. They fail to capture how accountability is dynamically constituted through everyday interactions—such as those between residents, community workers, and algorithmic systems like health codes—especially in contexts of crisis and uncertainty.

In contrast, the empirical journey of this study, from the methodological commitment to "follow the actors" in Chapter 4 to the detailed tracing of actor-network formation and disintegration in Chapters 5 and 6, shows that accountability is fundamentally performative (Butler, 2010; Callon, 2007). It comes into being through repeated acts of measurement, reporting, enforcement, and negotiation. This performative lens, informed by ANT, allows this study to see that accountability is not a backdrop to action but is produced through action itself.

The early pandemic response, detailed in Chapter 5, offers a compelling illustration. The municipal health code system was not merely a tool for accountability, it was a central actant in the performance of accountability. Its algorithmically generated colour-coded logic (green/yellow/red) actively produced new relations: actors whose movements, social worth, and even moral standing were related to digital outputs. Residents were not just ‘accountable’ in an abstract sense, they were constantly performing accountability through the daily routine of scanning QR codes, the renewal of digital statuses, and the display of green screens to human and non-human gatekeepers (security guards, scanner devices). This performance was a prerequisite for accessing basic necessities and social spaces, making the act of "showing one's code" a core accountability practice.

Similarly, the physical quarantine seals (magnetic sensors affixed to the doors of

apartments) functioned not only as material barriers but as moral inscriptions (Akrich, 1992). They materially and symbolically enforced a collective duty to contain the virus. Their presence on an apartment door transformed a private, domestic space into a site of intense public scrutiny and networked entities' intervention. The seal made accountability visible, tangible, and unavoidable. It enrolled neighbours into a network of surveillance, turning them into informal monitors, and it positioned the resident inside as both a victim and a potential vector of the virus. This complex moral and material performance is lost if see accountability merely as a principle of answerability to the state.

### 7.2.2 The Constitutive Role of Non-Human Actors in Enacting Accountability

A contribution of this study is its demonstration of how non-human actors are not passive tools but active participants in the performance of accountability. This addresses a gap in much accountability literature, even when discussing technology (e.g., Ahn and Wickramasinghe, 2021 on big data; Landi et al., 2022 on social media), often retains a anthropocentric focus, treating technology as an instrument rather than an agent. ANT's principle of generalised symmetry (Callon, 1986; Latour, 2005) provides the methodological stand to treat humans and non-humans with the same analytical seriousness, allowing this study to see that accountability is not solely a human achievement but a socio-material one, co-produced by a heterogeneous assembly of actors.

For instance, the health code, as the cornerstone of this assemblage, was far from a neutral tool. It acted as a powerful OPP that all actors: residents, RC staff, volunteers, business owners, were forced to negotiate. Its authority was not derived solely from its technical precision or its top-down mandate. Rather, its power emerged from its integration into a dense network of human practices (gatekeeping, daily commuting), municipal policies (lockdown directives), and digital infrastructures (WeChat APPs, municipal databases). It was this heterogeneous network that gave the code its performative force. Its performance, however, was not always smooth. When the system malfunctioned, as during the "false red code" incidents detailed in Chapter 6, the entire network of accountability faltered. These moments of breakdown reveal the fragility of this socio-material accomplishment, and expose the hidden works: the appeals, the manual overrides, the relational negotiations, that is usually required to maintain the accountability system.

Beyond the health code, other non-human actors played crucial mediating roles. WeChat groups evolved from announcement boards into vibrant "hybrid forums" (Callon, 2009), where accountability was publicly debated, contested, and sometimes reassembled. The platform's functions (screenshot sharing, message persistence, voice notes) presented both solidarity and mistrust, actively shaping the dynamics of accountability. This aligns with but deepens studies on social media use for public engagement during COVID-19 (Landi et al., 2022), showing how the platform's specific materiality shaped localised accountability performances.

The community data dashboard, displayed in the lobby and on phones, acted as a "spokesperson" (Latour, 2005) for the actor-network, making risk tangible and legitimising RC actions through a discourse of real-time, numerical objectivity. This is a localised example of the calculative accountability prevalent in national reporting (Ahrens and Ferry, 2021; Ahmad et al., 2021). Even low-tech, mundane objects like infrared thermometers and paper ledgers became key performers. The thermometer's affirmative "beep" and green light became a daily ritual (Suchman, 2007), signalling collective safety, while handwritten logs as a grassroots inscription device that bypassed and challenged the failing digital system, reperforming accountability on a more local, trust-based register.

These non-human actors did not simply facilitate a pre-defined human accountability, they actively shaped its form, meaning, and consequences. They are understood in this study as mediators (Latour, 2005, p.229), which are entities that "transform, translate, distort, and modify the meaning or the elements they are supposed to carry", rather than mere intermediaries.

### 7.2.3 Performativity in Practice: Rituals, Routines, and Resistances

The performance of accountability was embedded in specific, repeated rituals and routines that naturalised its operation, and reinforced its normative and material force. These were not one-off events, but ingrained socio-technical practices (Watson et al., 2012) that woven accountability into daily life.

The morning ritual at the community gate, where residents queued to have their temperature taken and their health codes scanned was a powerful example. This was a performative ceremony that repeated the community's social-material order. The green code on the phone screen was a performative discourse: a "digital speech act", when displayed, granted passage and affirmed one's status as a "safe" compliant citizen. These rituals materially enacted a form of governance that continuously blurred the lines between care and control (Foucault, 2008). The performance of compliance became synonymous with being a responsible community member.

However, a key strength of the performative perspective is that it inherently allows for instability, ambiguity, and resistance. If accountability is performed, it can also be performed differently, subverted, or refused. As the actor-network began to fray under policy shifts and actor fatigue (Chapter 6), the official performance of accountability started to break down. This created openings for alternative performances to emerge. Residents, volunteers and RC staff, faced with a system they perceived as increasingly irrational or unfair, began to improvise, much like the Spanish NGO volunteers studied by Yates and Difrancesco (2022) who shifted towards personal, ethical accountability.

They reperformed accountability through practices of care and solidarity. For example, the handwritten health logs and neighbour-verified "green stickers" are practical workarounds. Also, these practices were a reimagining of what accountability could look like: shifting from algorithmic surveillance to communal witnessing and relational verification. The mutual aid groups that delivered groceries and medicine to those with red/yellow codes performed a different kind of accountability, one based on relational obligations and moral duty to one's neighbour (Tronto, 2020; Mol, 2008) rather than on compliance with a remote algorithm. This echoes calls in the disaster literature for accountability to encompass "responsible caring for the other" (McKernan and McPhail, 2012) and to address subjective needs (Safari et al., 2020; Yu, 2021), but shows it being enacted materially at the local level. Even the act of a "Big White" volunteer reclassifying a meal delivery as an "essential medication delivery" was a subversive performance that reshape the rigid script of the formal accountability system, to serve a situated ethical need. These acts of grassroots reassembly reinvented and reperformed it through a different set of values: care, reciprocity, and local trust, demonstrating the context-dependency of accountability performances.

### 7.2.4 Summary: From Possession to Performance in Accountability Theory

The empirical findings from this study necessitate a rethinking of dominant theoretical conceptions of accountability, particularly those that treat it as a stable attribute, a transferable commodity, or a hierarchical relationship that can be statically mapped and allocated. This research challenges what can be termed the "possession" model of accountability, which is prevalent in mainstream public administration and governance literature.

This view, exemplified by scholars like Mulgan (2000) and Bovens (2007), often conceptualises accountability as a property or a good that can be possessed by institutions, discharged by officials, and demanded by citizens. Mulgan's (2000) seminal work, for instance, frames accountability as an "ever-expanding concept" centred on the "process of being called to account," often within formal, principal-agent relationships. Similarly, Bovens' (2007) widely cited analytical framework treats accountability as a mechanism, a social relation in which an actor can be held to account by another forum, implying a stable, pre-defined structure of roles and responsibilities. In these perspectives, accountability is something an actor has a status conferred by a position or a contract, and its primary function is often reduced to ensuring answerability for actions and ensuring compliance with pre-established rules or norms (see also Sinclair, 1995; Romzek and Dubnick, 2018). This view tends to reify accountability, turning it into an abstract ideal or a bureaucratic output (e.g., reports, audits) that can be designed, implemented, and evaluated.

However, the empirical journey traced in Chapters 5 and 6 paints a different picture, one that firmly aligns with the performative and socio-material ontology of ANT. The data demonstrates that accountability is not a pre-existing resource to be distributed but a precarious, emergent effect of networked relations and interactions (Law, 2009). It is not something actors have, but something they continuously do through everyday practices, material arrangements, and affective engagements.

Furthermore, the traditional view often presupposes that accountability is pre-defined and fixed by legal or institutional frameworks (Boven, 2007). Yet, findings show that while

these frameworks provide important scripts and resources, the meaning and practice of accountability are always contingent and situated (Latour, 2005). It was enacted differently at the community gate, in the RC office, and in a private WeChat chat. Faced with systemic failures and moral dilemmas, frontline workers and residents reperformed accountability through practices of care. These acts were not aberrations or 'breakdowns' in a normative sense (Baker, 2014), but the process of accountability being reassembled and redefined in practice. This demonstrates that accountability is not fixed by institutional design but is constantly negotiated and translated in response to evolving contexts, conflicts, and affordances.

Crucially, the conventional model always focuses on human actors and their relationships. In contrast, this study's ANT-driven analysis demonstrates that accountability is not exclusively human. To focus only on human actors is to miss more than half of the performance. Non-human actors are active mediators that co-constitute the possibilities and limitations of accountability (Latour, 2005). The health code, the quarantine seal, the WeChat group, the paper ledger, and even the shared medicine basket were indispensable participants in the drama of accountability. They shaped behaviours, enabled certain forms of oversight while disabling others, and became sites of intense contestation and innovation. This aligns with a growing body of accounting scholarship (e.g., Justesen and Mouritsen, 2011; Robson and Bottausci, 2018) but extends it by showing how in a crisis, the agential role of non-humans becomes visible, and their failure or alignment directly determines the success or failure of accountability practices.

In conclusion, this empirically grounded, performative view challenges the core tenets of the traditional model. Accountability is not a commodity to be possessed but an emergent accomplishment. It is not pre-defined by frameworks but is always becoming through practice. It is not a solely human affair but a socio-material achievement, constituted through the dynamic and often contested interplay of both human actors—such as residents, RC staff, and volunteers—and non-human actors—including health codes, quarantine seals, and data dashboards. This perspective moves beyond abstract, often normative, debates about accountability (calculative vs. narrative, hierarchical vs. horizontal), to reveal its concrete, often messy, and always dynamic reality. It shows that effective accountability is not about designing perfect systems for holding agents to account, but about understanding the socio-material conditions that enable responsible, responsive, and caring practices to

emerge and exist. This theoretical reorientation, is essential for analysing the complex, networked governance of crises, where control is never total, agency is hybrid, and responsibility is distributed. This will be further discussed in the next subsection.

## 7.3 Displacement of Responsibility Across Time, Actors, and Affects

The preceding sections have established that accountability is not a static attribute to be possessed, but a continuous socio-material performance enacted through the dynamic associations of human and non-human actors. This performative view necessarily problematises conventional understandings of responsibility. Draws on Mol's (2008) notion of 'the logic of care', which frames responsibility as a distributed, ongoing practice rather than an individual attribute, and further informed by Latour's (2005) and Law's (1992) relational ontology of agency, which sees action and its consequences as emerging from heterogeneous networks rather than residing in isolated human actors, responsibility in this study is reconceptualised as an effect of accountability performances: distributed, contingent, and relational, emerging from the ongoing translations within the actor-network. It does not reside in a fixed point but is dynamically contested and reassigned across temporal phases, among heterogeneous actors (human and non-human), and via affective intensities.

### 7.3.1 Temporal Displacement

A central finding of this research is that responsibility is not a static contract but a temporally unfolding process. What constituted a “responsible” action at one moment in the pandemic became contested, obsolete, or even irresponsible at another. This temporal displacement was driven by the evolution of the virus, shifting national policies, and the accumulating fatigue within the actor-network.

*Phase 1: Synchronised Responsibility under “Dynamic Zero-COVID”*

During the initial emergency response (detailed in Chapter 5), responsibility was tightly coupled with immediate containment. The OPP was explicit: collective biological safety required rigid, simultaneous adherence to state-mandated protocols. This phase was characterised by what can be termed presentist responsibility: a moral and operational

imperative focused on the immediate mitigation of viral risk (Beck, 2014). The future was effectively suspended, all actions were evaluated against their capacity to secure the present.

This synchronisation was achieved through a highly disciplined network of human and non-human actors performing in concert. Responsibility was routinised and ritualised through daily practices: the mandatory temperature checks, the renewal of health codes, the acceptance of quarantine seals, and the regular reporting via WeChat groups. These were obligatory rituals that bound the community into a cohesive temporal rhythm. The health code system, for instance, acted as a temporal disciplinarian, its 24-hour validity enforcing a cycle of constant vigilance. As Resident F6M2 noted, “The code became our second ID, no green, no freedom” highlighting how digital governance imposed a new temporality of accountability and responsibility.

Non-human actors played a crucial role in enforcing this synchronicity. Quarantine seals, data dashboards, and infrared thermometers were active mediators of temporal order (Latour, 2005). The authority of these devices was rarely questioned, their prescriptions were seen as scientifically objective and temporally non-negotiable.

However, this regime of synchronicity came at a cost. It produced termed temporal exhaustion: the draining effect of perpetual alertness and the suppression of individual temporalities (e.g., work schedules, care responsibilities). Frontline workers, especially RC staff and volunteers, bore the brunt of this exhaustion, operating in a state of continuous crisis time that eroded their capacity for moral reasoning beyond immediate execution. This leads to the next phase.

*Phase 2: Renegotiation under “Precision Prevention”*

As the pandemic persisted and policies shifted toward “Precision Prevention” (Chapter 6), the previously stable temporal order began to fracture. The community was transformed into a state of temporal dissonance: national policies changed (e.g., quarantine shortened from 21 days to 14+7, then to 7+3), but the material infrastructures of accountability lagged behind. Sensors remained calibrated for longer durations, algorithms referenced outdated risk zones, and policy documents became ambiguous “boundary objects” (Star

and Griesemer, 1989) open to conflicting interpretations.

This disjuncture transformed the politics of time into a primary site of ethical and practical conflict. Responsibility was displaced from fixed rule-following to contested interpretations of temporal alignment. Residents began wielding new policy documents as material witnesses against outdated enforcement. For example, Resident F5M1's protest: "The rules say 14+7! Why is this sensor still on my door after day 16? Are you inventing your own laws?", shows how responsibility was recalibrated through temporal claims-making. Here, the moral high ground shifted from those enforcing old timelines to those citing new ones.

This phase saw the rise of asynchronous responsibility, where actors improvised their own temporalities in response to systemic failures. The creation of supplementary health logs in WeChat groups, the manual overrides of glitched health codes by RC staff, and the staggered renewal windows for shift workers all reflect a move away, from monolithic responsibility toward temporal governance. Moreover, the meaning of responsibility expanded from short-term containment to long-term sustainable co-existence. The initial model of crisis responsibility proved unsustainable, burning out actors and eroding trust. In its place emerged practices oriented toward persistence: mutual-aid networks, medicine baskets, paper-based accountability systems, and community-led support for the elderly. These were reassemblages of temporal responsibility, ones that prioritised relational care and social resilience over immediate biological risk mitigation. In this case, the community reclaimed temporal agency, reassembling responsibility to serve its own enduring needs.

### 7.3.2 Displacement Across Actors

The ANT framework challenges the humanist, individualist notion of responsibility that dominates conventional governance and accounting literature (Bovens, 1998; French, 1984). As established in the theoretical framework (Chapter 3), ANT posits that agency, which has the capacity to act and make a difference, is a relational effect generated through networked associations (Latour, 2005; Law, 1992). This ontological shift necessitates a rethinking of responsibility. If agency is distributed across a network of heterogeneous actors, then responsibility, as the corollary of agency, must also be understood as

distributed, contingent, and relational. It cannot be assigned to a single human "subject" but is instead displaced across, and co-constituted by, the entire socio-material assemblage. The empirical findings from this study provide grounded evidence for this theoretical proposition. The pandemic response in the community was not a story of heroic individuals bearing responsibility, nor a story of state-imposed control. It was a complex field of distributed moral agency, where responsibility was continuously displaced and negotiated across a network of human and non-human actors.

The early actor-network assemblage demonstrated a hybrid nature of responsibility. The municipal government set the OPP (‘containment’), but it was the health code algorithm that acted as a primary agent in displacing and enacting this responsibility. It informed and made decisions. Its colour-coded logic was a non-negotiable agency that displaced epistemic responsibility (the responsibility to know and identify risk), from potential human contact tracers and clinicians to an algorithmic system analysing large datasets. Simultaneously, it displaced moral responsibility for enforcement from RC staff to the code itself. Staff could shift resentment and moral inquiry by appealing to the algorithm’s supposed objectivity (“Blame the system, not us”). Here, technology absorbed blame and shielded human actors from direct moral confrontation (Sharon, 2021). This process of delegation (Latour, 1992) is a powerful form of displacement, but as the study shows, it is inherently precarious.

As the actor-network destabilised, the failure of non-human actors caused responsibility to be re-thrown onto human actors. In the ‘false red code’ incidents, algorithm’s failure created a moral vacuum: who was now responsible for the unjust isolation of a healthy individual? The programmer? The municipal official? The RC staff who enforced it?

The empirical data shows that the answer was not a simple reversion to an individual human agent. Instead, responsibility was re-assembled through a new, improvised network of human compassion, ethical reasoning, and material practices. The Big White who re-categorised a meal delivery as “essential medicine” was not acting as a lone entity. They were a mediator within a new, emergent actor-network that included the sick resident, the relational obligation to care, the materiality of the food, and the loophole in the protocol. This act was a counter-deplacement of responsibility: away from the flawed technological system and onto a situated, relational ethical framework. This aligns with Mol’s (2008)

‘logic of care’, showing how responsibility is practised through continuous, adaptive tinkering rather than through the rigid application of rules.

This displacement also operated horizontally among the other human actors. The role of building representatives (楼长) exemplifies this. They were not formal state officials but emerged as crucial obligatory passage points (Callon, 1986) within the community itself. Responsibility for communication, resource distribution, and rule negotiation was displaced from the official structure onto these grassroots leaders. Their legitimacy derived from relational trust and situated knowledge, demonstrating that the locus of responsible agency can shift from the state to the social sphere during periods of institutional failure (Braun and Könninger, 2018).

The displacement of responsibility across actors is therefore constitutive process of networked governance. The empirical data shows that responsibility is:

(1) Delegated to non-humans to stabilise and objectify enforcement (e.g., health codes, sensors).

(2) Reclaimed by humans when technological delegation fails or creates ethical crises.

(3) Re-distributed through new hybrid formations that blend human judgement with alternative non-human artefacts (e.g., paper logs, WeChat verification).

(4) Contested across different human collectives (state vs. community), with the definition of what counts as ‘responsible’ itself being a stake in the struggle.

This view alligns with the theoretical claim in Section 3.5 that responsibility is constantly negotiated and translated in response to evolving contexts, conflicts, and affordances. It moves beyond simplistic models that seek to “pin down” responsibility and instead reveals that governing complex crises is more about managing its continuous displacements across the actor-network in a way that maintains ethical coherence and collective resilience.

### 7.3.3 Affective Displacement: The Force of Feelings in Governing Responsibility

One of contribution of this study is its detailed tracing how responsibility is displaced and governed through affects. The actor-network was held together and torn apart not just by rules and technologies, but by powerful affective currents. The analysis here is informed by

the theoretical shift discussed in Chapter 3, particularly the work of Boedker and Chua (2013), who conceptualise accounting as an “affective technology”. They argue that accounting devices are deployed to generate and manage affect (e.g., excitement, anxiety, collective urgency), which in turn becomes a central actant shaping actor-network dynamics. This moves beyond a human-centric view of emotions as internal psychological states. Instead, following ANT's principle of symmetry, affect is treated as a mediator. Affect circulates, attaches to human and non-human bodies, and alters the course of events. It is in this sense that there was an affective displacement: the process whereby responsibility is moved and transformed through the agential force of affective intensities.

In the early phase (Chapter 5), responsibility was enforced through the mobilisation and displacement of fear and anxiety. The visible presence of the virus, the red health code, and the magnetic quarantine seals were affective generators. They produced an atmosphere of dread that powerfully bound individuals to their prescribed roles. This process can be understood as an affective interpellation (Butler, 1997), where the subject (‘the responsible citizen’) is constituted through a visceral, pre-conscious response to a threat. To be responsible was to be afraid, and to be afraid was to comply. The responsibility for securing the collective was thus displaced onto and enacted through the managed circulation of fear. The health code, in this light, was a affective technology. Its colours triggering immediate physiological and behavioural responses that bypassed deliberate reasoning.

As the actor-network frayed (Chapter 6), a different set of affects became dominant and began to displace responsibility in new directions. Fatigue, frustration, resentment, and distrust were psychological states experienced by individuals, and were also active forces that eroded the actor-network from within. RC staff burnout (‘actor fatigue’) was an affective state that directly led to the withdrawal of enforcement effort: responsibility was effectively abandoned because the affective capacity to sustain it was depleted. As one staff member noted, they began to avoid confrontations, letting minor violations go unchecked. Here, the affect of fatigue acted as an actant that dissociated human actors from their enrolled roles.

Similarly, resident distrust in the frozen data dashboard was not a passive lack of belief but

an active force that motivated them to create their own symptom maps. The affect of distrust displaced epistemic responsibility from a broken official non-human actor (the dashboard) to a grassroots, human-centric initiative. This resonates with the theoretical notion in Chapter 3 that affect is important to the ongoing translation of interests, the enrolment of actors, and the stabilisation of actor-networks (Callon, 1986), but here it driving dis-enrolment and de-stabilisation.

More significantly, the study shows how care and compassion emerged as the powerful actants for the positive reassembly of responsibility. The moral distress felt by a Big White forced to seal an asthmatic child's door was an individual emotion, and, importantly, a actor-network event. This intense affective response: a combination of guilt, empathy, and professional anguish, triggered a re-translation of the accountability assemblage. It motivated acts of improvisation, rule-bending, and the creation of new protocols.

This is where the empirical data illustrates and extends the theory of "responsible caring for the other" (McKernan and McPhail, 2012; Tronto, 2020) cited in the literature review. It shows that this care is not an abstract principle but a materially enacted affect. The act of reclassifying a meal as medicine was a direct result of affective displacement: responsibility was moved from a rigid, impersonal protocol ('seal the door') to a fluid, relational ethic ('find a way to deliver insulin'), and this movement was propelled by care. Affect, in this phase, became the obligatory passage point for a new form of moral accountability.

Overall, this analysis in this subsection demonstrates that responsibility during the pandemic was a fluid relational effect constantly reconfigured through displacements across time and actors. These displacements are deeply intertwined. The temporal displacement (from presentist containment to long-term care) created the conditions for the affective displacement (from fear to fatigue to compassion). This affective shift, in turn, triggered the actor displacement (from algorithmic enforcement to human improvisation) and the technological displacement (from digital codes to paper logs). The failure of technological displacement (glitching algorithms) accelerated the temporal and affective crises, forcing the re-displacement of responsibility onto community networks.

## 7.4 ANT's Value in Revealing Mundane, Affective, and Material Dimensions

The preceding sections have argued that accountability is a performative accomplishment, and that responsibility is continually displaced across time, actors, and affects. This focus leads this study to a broader consideration of governance. If accountability is not a static attribute but an emergent effect of networked relations, and if responsibility is fluidly negotiated rather than fixed, then the process of governing—of ordering actions, allocating resources, and steering daily life—must be understood as similarly dynamic, situated, and socio-material. Governance, in this ANT-informed view, is the pattern that emerges from the performances of accountability and responsibility (Latour, 2005; Law, 1994). It is not a top-down framework that pre-defines roles, but a precarious achievement woven from the everyday practices, affective investments, and material arrangements. Thus, having examined how accountability is performed and how responsibility is displaced, the section now turn to ANT's unique capacity to reveal what governance itself is made of at fundamental level—the mundane, the affective, and the material.

ANT has provided this study a theoretical lens to evaluate the often-overlooked dimensions of governance: the mundane, the affective, and the material. While traditional governance literature tend to focus on macro-structures, formal institutions, or human intentionality (e.g., DiMaggio and Powell, 1983), ANT's radical relational ontology enables a more specific tracing of how governance is enacted in everyday practices, through emotional investments, and material mediations. This section argues that ANT's primary value lies in its capacity to reveal governance as a socio-material accomplishment, continuously performed through the interactions of human and non-human actors within dynamic networks. By foregrounding the mundane, affective, and material, ANT not only enriches the understanding of pandemic governance but also challenges dominant theoretical frameworks that neglect these dimensions.

### 7.4.1 Revealing the Mundane: Governance as Everyday Practice

A contribution of ANT to governance studies lies in its radical reorientation of analytical focus from macro-structures and formal institutions to the mundane and everyday practices, through which governance is incessantly enacted, sustained, and transformed. Unlike

dominant theoretical frameworks in public administration and political science, such as institutional theory, which often seeks explanations in legitimacy pressures, isomorphic processes, and macro-level norms (DiMaggio and Powell, 1983), ANT posits that the "social order" is not a pre-existing framework that dictates action. Instead, order is a precarious effect, continuously generated and maintained through the repetition and interconnection of minor operations performed by heterogeneous actors (Latour, 2005; Law, 1994). It is through this lens that ANT reveals accountability and governance not as static design but as a practice, performed in the often-invisible rituals of daily life.

ANT's sensitivity to the mundane is not merely a methodological preference but stems from its core ontological commitment to relational materialism. ANT refuses the classic sociological dichotomy between macro/micro or structure/agency. For ANT, there is no 'society' or 'system' that exists independently of the practices that constitute it. As Latour (2005, p. 35) argued, "the social" is not a special domain or a type of force but is rather a "tracing of associations" between actors. Therefore, to understand a vast phenomenon like pandemic governance, must "follow the actors themselves" through small-scale interactions, technical procedures, and mundane artefacts. This is why ANT is adaptive to the mundane: because that is precisely where the work of assembling and maintaining the actor-network is done.

This study's empirical findings, detailed in Chapters 5 and 6, are illustrations of this principle. The national "Dynamic Zero-COVID" policy was not an abstract, top-down mandate that automatically realised itself. Its power and effect were dependent on its translation into a chain of mundane, localised practices. It was performed into existence through: the daily ritual of residents scanning their health codes on smartphone apps (a momentary gesture that repeatedly enrolled them into the surveillance network); the repetitive act of RC staff and security guards pointing infrared thermometers at wrists and foreheads at community gates (a ritual that materialised the boundary between 'safe' and 'risky' spaces); the constant updating of data dashboards and the filing of paper-based reports (inscriptive practices that made the pandemic 'knowable' and 'governable' for authorities); and the manual affixing of magnetic quarantine seals to doors (a physical act that translated a public health directive into a tangible, inescapable material reality for individuals).

These were the processes through which the policy gained its reality and force. Each scan, each temperature check, each updated record was a micro-act of governance that, when aligned across the actor-network, produced the macro-effect of a coordinated state response. The stability of the entire governance assemblage, as Chapter 5 showed, dependent on the successful enrolment and repetition of these mundane practices.

Subsequently, Chapter 6 demonstrated how the disintegration of the actor-network began with the breakdown of these everyday routines. When health codes glitched, thermometers became unreliable, and data dashboards froze, the mundane rhythms of governance were disrupted. This disruption exposed the fragility of the actor-network, which was dependent on the continuous and faithful performance of these practices. Residents' refusal to comply with outdated quarantine seals was a rejection of a mundane practice that had lost its legitimacy and alignment with a shifted policy. The shift to handwritten health logs and paper-based 'Green Stickers' was a grassroots re-translation, a reassembly of governance through new, more trusted mundane practices.

Contrasting this with institutional theory illuminates ANT's unique value. Institutional theory would analyse the pandemic response by examining how organisational forms (e.g., the Residents Committee) responded to coercive, mimetic, or normative pressures from the central state to maintain legitimacy (DiMaggio and Powell, 1983). While this explains why the RC might adopt certain policies, it brackets the question of how these policies actually work on the ground. It takes for granted the 'black box' of implementation. It cannot explain the materiality of the quarantine seal, the agency of the malfunctioning thermometer, or the affective labour of the volunteer patiently helping an elderly resident renew a code. It overlooks the fact that, without these mundane, material practices, the policy and the institution are potentially powerless.

Consequently, ANT's power lies in its ability to deconstruct the apparent macro-solidity of governance into the micro-flows of everyday practices. It shows that governance is a continuous, collective achievement woven from mundane acts. By foregrounding these acts, ANT provides a more specific understanding of how power operates, how order is produced, and how accountability is performed in the everyday reality of the community.

### 7.4.2 Affective Dimensions: Governance as Emotional Labour

Another contribution of ANT is its ability to incorporate affect and emotion into the analysis of governance. Traditional frameworks, often rooted in rational-choice or principal-agent models, tend to treat emotions as externalities to rational decision-making, which are factors to be managed or suppressed (Bovens, 2007; Mulgan, 2000). In contrast, ANT's principle of generalised symmetry provide the necessary theoretical tools to conceptualise affect not as a private, psychological state residing within individuals, but as a circulating force and a relational effect that emerges from, and actively shapes, the associations within a actor-network (Latour, 2005). This allows for an analysis of governance as a form of emotional labour (Hochschild, 2002), where feelings are active, constitutive components of the socio-material assemblage.

ANT's unique capacity to reveal this dimension stems from its refusal to pre-define the sources of agency. By granting analytical symmetry to humans and non-humans, ANT can trace how affective states are co-produced through the interactions of diverse actors. Fear, trust, anxiety, or solidarity are triggered and circulated by both human and non-human actants. For instance, this study demonstrated that a malfunctioning health code (a non-human actor) was not a neutral technical glitch, it was a potent actant that generated anxiety and frustration in residents, which in turn eroded trust in the RC staff (human actors) who were forced to enforce its flawed directives. Conversely, a volunteer's compassionate delivery of groceries (a human act) could generate feelings of solidarity and trust, which strengthened the actor-network's resilience. The frozen community data dashboard, once a trusted spokesperson, became an actant that produced epistemic anxiety and distrust. In the ANT framework, these affects are actor-network effects, they are properties of the associations between bodies, technologies, policies, and words.

This perspective is absent in alternative theoretical frameworks. Structuration theory (Giddens, 1984), while masterfully bridging structure and agency, remains human-centric. Its core concept of the "duality of structure" privileges human knowledgeability and intentionality as the primary motors of social reproduction. It therefore lacks the vocabulary and ontological commitment to account for how a non-human entity, like an

algorithmic coding or a quarantine seal, can directly produce an emotional response that alters the course of action. It would struggle to theorise the moral distress of an RC staff member as anything other than an internal, psychological conflict, rather than a relational tension produced by their position.

Similarly, critical realism (Bhaskar, 2013), with its stratified ontology distinguishing the real, the actual, and the empirical, would likely place emotions within the domain of the "empirical" experience. While it might acknowledge emotions as real, its tendency to seek explanations in underlying social structures and powerful mechanisms often leads it to overlook the materiality of affect: how it is mediated by and embedded in technologies. For a critical realist, the deeper story might be about state power or neoliberal biopolitics, potentially skipping over the crucial moment of how a specific technological failure caused a specific emotional response that led to an act of resistance or care.

ANT, by contrast, stay precisely in this moment. It shows, as Chapters 5 and 6 detailed, how the moral distress experienced by RC staff was a direct product of their positioning within the actor-network. They were simultaneously enrolled by non-human actants (lgorithmic health codes demanding strict enforcement) and human actants (vulnerable residents pleading for humane exceptions). This distress was a systemic product of the actor-network's configuration. Yet, following ANT's performative logic, this affective state was not merely an output, it became an input — a motive for ethical improvisation. Distress catalyzed re-translation, leading staff to falsify records, negotiate flexible terms, and prioritise care, thereby actively reconfiguring the actor-network.

Likewise, residents' anxiety, born from material uncertainty (e.g., frozen dashboards) and policy ambiguity, was not a passive condition. It was an active force that motivated them to reassemble new forms of accountability, such as creating building-based symptom maps and mutual-aid systems. Their solidarity was materialised in shared medicine baskets and reciprocal WeChat messages, becoming a glue that held the community together when formal systems faltered.

In conclusion, ANT's value here is its power to materialise affect and emotionalise governance. It reveals that the emotional labour of frontline workers and the affective

responses of residents are not peripheral to accountability. By tracing how affect circulates through and is shaped by both human and non-human actors, ANT provides a more humane understanding of governance, one that is adaptive to the lived, felt experience of power and responsibility.

### 7.4.3 Materiality: Governance as Socio-Technical Assemblage

Another core element of ANT is the centrality of materiality. ANT challenges the anthropocentric and discursive biases that have long dominated social sciences, insisting that the material world is not a passive backdrop, a neutral tool, or a mere social construction. Instead, ANT posits that things like technologies, artefacts, bodies, documents, are active participants in the social world, possessing the capacity to enable, constrain, and disrupt human action (Latour, 2005). This ontological stance allows ANT to reveal governance not as a purely social or political endeavour, but as a socio-technical accomplishment, a fragile and dynamic assemblage held together by the intricate alliances between human and non-human actors.

ANT's unique power to illuminate the material dimension rests on its principle of generalised symmetry (Callon, 1986). This principle mandates that the analyst must explain the world using the same conceptual repertoire for both humans and non-humans. A RC staff and a policy document, a resident and a health code algorithm, are all treated as actants, that have the capacity to modify a state of affairs by making a difference in the course of events. This is a profound departure from most social theory. It allows the researcher to see that the stability and effectiveness of the community's pandemic response were not solely the result of human agency or political will. They were the product of a actor-network where non-human actants played indispensable roles.

For example, the health code was acted as a gatekeeper, materially enforcing a binary logic of 'safe/unsafe' and reconfiguring urban mobility. The quarantine seal was a materialised law, a coercive actor that physically enforced isolation. The data dashboard functioned as a spokesperson, lending objectivity and legitimacy to the RC's actions by making complex realities seem transparent, comparable, and manageable. Even the humble paper log and bicycle, in the actor-network's later phase, became crucial actants in reassembling

accountability through alternative, low-tech means.

This analysis stands in contrast to other theoretical approaches that either marginalise or misconstrue the role of materiality. Social Construction of Technology (SCOT), for instance, emphasises that technologies are shaped by social groups and interpretive flexibility (Pinch and Bijker, 1984). However, it often tends to reduce the technology itself to an empty vessel filled with social meaning, focusing on the debates around it rather than the agency of it. SCOT would excel at analysing the conflicting interpretations of the health code by residents, RC staff, and policymakers. But it would be less equipped to analyse how the code's algorithmic logic itself, its specific parameters for assigning risk, actively reshaped those social relationships, creating new categories of identity (e.g., 'green-code person') and new forms of exclusion. Also, a technological determinism would see the health code as an autonomous force that inevitably produces certain social outcomes (Winner, 1977). ANT rejects this. For ANT, artefacts are figurations of a actor-network. They embody and freeze a particular set of social relations, but they are never fully autonomous. The power of the health code was dependent on its enrolment within a wider actor-network: it required smartphones to run on, scanners to be read by, government databases to pull data from, and human enforcers to act upon its instructions. Its agency was delegated and conditional.

This is where ANT's value over other social theories becomes evident in this study. Both institutional theory and critical realism would analyse the health code system as an institutional 'structure' or a generative 'mechanism'. While not wrong, this language can often reify the technology, turning it into a black box whose inner workings and specific material constraints are taken for granted. ANT, by mandating that 'open the black box', forces this study to see that the 'structure' is itself composed of heterogeneous actants: lines of code, server capacities, data entry protocols, battery lives, each of which can become a point of failure or controversy (see Chapter 6 with the 'glitching' codes and 'frozen' dashboards). The governance network did not just 'use' technology, it was composed of it.

The empirical chapters of this study are evidences to this socio-material entanglement. Chapter 5 showed how governance was performed into being through the repetitive material practices of scanning, measuring, and sealing. Chapter 6 demonstrated that the

actor-network's destabilisation began with the material failure of these non-human actors. The subsequent reassembly of accountability through paper logs, medicine baskets, and bicycles was a reconfiguration of the socio-material assemblage, enrolling different, more trusted actants to achieve a similar goal: collective care and order. By tracing the interactions between these elements, ANT reveals the materially entangled nature of governance.

## 7.5 Rethinking "State Control" and "Citizen Compliance" in This Study

Having established how accountability is performed and how responsibility is displaced across time, actors, and affects, this section extends discussion of 7.4 to re-examine two central concepts often invoked in discussions of governance: "state control" and "citizen compliance."

As mentioned in the literature review chapter, the COVID-19 pandemic has often been interpreted through a dualistic lens: the state as a centralised controller and citizens as either compliant or resistant subjects (Ahn and Wickramasinghe, 2021; Ahrens and Ferry, 2021; Mitchell et al., 2021; Baker, 2014). Such a view is reinforced by mainstream political science and public administration literature, which tends to conceptualise state power as something exerted over society, often through hierarchical, top-down mechanisms (Foucault, 1991; Scott, 1998; Hood, 1983). Similarly, citizen compliance is frequently understood as a response to authority, either through coercion, legitimacy, or rational choice (Weber, 1978; Levi, 1997; Tyler, 2006). However, the empirical findings of this study challenge such reductive binaries. Through the lens of ANT, this research reveals that both "state control" and "citizen compliance" are not pre-defined or static conditions but emergent effects of dynamic, socio-material networks. They are continuously performed, contested, and reassembled through the interactions of human and non-human actors within situated governance assemblages.

This section synthesises evidence from Chapters 5 and 6 to argue that what is often labelled as "state control" is in fact a distributed achievement, orchestrated through a network of policies, technologies, street-level bureaucrats, community volunteers, digital

platforms, and affective relations. Likewise, “citizen compliance” is not merely a behavioural outcome but a negotiated, often contradictory, practice that is deeply embedded within these same networks. By tracing the translation processes, this study shows how control and compliance are fluid, contingent, and always in-the-making.

### 7.5.1. Beyond the State–Society Dichotomy: Control as Networked Orchestration

Conventional theories of the state often portray it as a monolithic entity capable of imposing its will through laws, policies, and coercive apparatuses (Jessop, 1990; Mitchell, 1991). Even in more nuanced accounts, such as Foucault’s (1991) governmentality, the state remains a dominant—if diffuse—site of power that shapes conduct through discourses and institutions. During the pandemic, this perspective might lead one to interpret China’s response as a textbook case of authoritarian control: swift lockdowns, digital surveillance, and strict compliance mechanisms (e.g., health codes, quarantine seals) that reflect state capacity and citizen subordination.

However, an ANT-informed analysis reveals a more complex picture. The state’s “control” did not reside in a central command centre but was distributed across a heterogeneous network of actors, both human and non-human. For instance, the municipal health code system, as a key tool of pandemic governance, was an instrument of state surveillance as well as a mediator that actively reshaped relations between residents, community workers, and policymakers. Its authority was not inherent but performed through its integration into daily practices: the scanning of codes at gates, the validation by security personnel, and the moral narratives around “keeping green” (see Section 5.3.1). When the system glitched or failed to align with shifting policies (e.g., the transition to “precision prevention”), its authority eroded, and with it, the state’s perceived control.

This aligns with Latour’s (2005) contention that power is not a possession but an effect of actor-network configurations. The state’s ability to “control” the pandemic depended on the successful enrolment and alignment of diverse actors: the algorithms processing health data, the RC staff enforcing rules, the volunteers delivering supplies, the residents updating their statuses, and even the materiality of quarantine seals and temperature sensors. When these actors aligned, as they did during the early phases of the pandemic: the actor-network held, and state control appeared effective. When misalignments occurred, due to policy changes, technological failures, or actor fatigue: the actor-network fractured, and control

became contested (Chapter 6).

This distributed view of control challenges state-centric theories and resonates with what Moran and others have called the "diffused state" or the "state as network" (Moran, 2002; Rhodes, 2007). It also complements recent work in critical policy studies that emphasises the role of street-level bureaucrats and local actors in making state power through everyday practices (Lipsky, 2010; Hupe and Hill, 2007). However, ANT goes further by incorporating non-human actors into the analysis, showing how technologies, documents, and physical artefacts are not passive tools but active participants in the orchestration of control.

### 7.5.2. Citizen Compliance as Negotiated Practice

Just as "state control" is more complex than often assumed, so too is "citizen compliance." Rational choice models might frame compliance as a calculation of costs and benefits (Levi, 1997), while normative theories emphasise the role of legitimacy and trust (Tyler, 2006). During the pandemic, the view might interpret high compliance rates in China as a result of coercive state capacity or ingrained collectivist values. While these factors may play a role, this study reveals that compliance was not a blanket response but a situated and negotiated practice.

For example, residents did not simply obey health code directives, they engaged with them tactically. When the system assigning false yellow or red codes, residents and community workers developed workarounds: sharing temperature logs in WeChat groups, manually verifying statuses, and even overriding scanners when they conflicted with local knowledge (Section 6.4.1). These actions were pragmatic adaptations to sustain the function of accountability when the form was broken. Compliance, in this sense, was not blind obedience but a relational achievement, mediated by trust, reciprocity, and moral reasoning.

This resonates with Certeau's (1984) concept of "tactics", the ways in which ordinary people reappropriate and reinterpret systems of power in their daily lives. However, ANT adds a material dimension: compliance is not only socially negotiated but also

technologically mediated. The health code, the quarantine seal, the data dashboard, all these non-human actors shaped what compliance could mean in practice. They set the conditions for action, but they did not determine it. As shown in Chapter 6, when these technologies faltered, compliance became even more contingent, and reliant on human judgement, social bonds, and ethical improvisation.

Thus, compliance in this way is better understood as a network effect rather than an individual choice. It emerges from the interactions between policies, technologies, community norms, and personal circumstances. This perspective challenges simplistic narratives of authoritarian compliance and highlights the agency of citizens, not as outright resisters, but as active participants in the co-production of order (Osborne and Strokosch, 2013).

This section has argued that "state control" and "citizen compliance" are not static conditions but dynamic effects of socio-material networks. They are orchestrated rather than imposed, through the interactions of policies, technologies, street-level actors, and citizens. This has practical implications for policymakers and public administrators. It suggests that effective governance during crises requires more than top-down commands, it demands adaptive networks that can respond to change, repair failures, and sustain trust. It also highlights the importance of maintenance, both technical and social, in sustaining governance infrastructures. Next section will explore the implications of these findings for critical accounting and public sector governance studies, with a focus on how accountability is reconfigured in hybrid governance contexts.

## 7.6 Implications for Critical Accounting and Public Sector Governance studies

The empirical journey traced in this study offers implications for both critical accounting and public sector governance studies. By applying an ANT-informed lens, this research challenges prevailing structural and normative approaches that dominate these fields. Rather than treating accountability as a static institutional arrangement or a moral imperative, this study have conceptualised it as a socio-material accomplishment.

Also, while ANT has been applied in accounting domain, this study extends ANT into a new and critical domain: accountability under crisis conditions. Pandemic governance is characterized by radical uncertainty, affective intensity, and temporal dislocation, contexts where actor-networks form, fail, and reassemble in rapid, often improvised ways. This shift enables this study to move beyond ANT's traditional focus on relative stability and slow institutionalization, and instead capture accountability as a real-time achievement of repair and adaptation.

This section will articulate these implications across two domains: critical accounting studies, which have long sought to expose the political and ethical dimensions of accounting practices; and public sector governance research, which has traditionally focused on institutional designs, policy implementation, and citizen-state relations. The findings necessitate a rethinking of core concepts, such as responsibility, transparency, control, and compliance. By foregrounding the role of affect, materiality, and mundane practices, this study also calls for methodological and theoretical expansions in both fields.

### 7.6.1 Implications for Critical Accounting Studies

*From Disclosure to Performance*

Critical accounting scholars have historically focused on the politics of disclosure: how accounting practices render certain phenomena visible while obscuring others, often serving powerful interests (Cooper and Owen, 2007; Lehman, 2007; Messner, 2009). This study extends this tradition by shifting the focus from what is accounted for to how accounting is done in practice. It shows that accountability is not merely a matter of producing reports or adhering to standards, it is a performative process involving a wide range of human and non-human actors, from health codes and quarantine seals to volunteers and policy documents.

For instance, during the early pandemic, the health code system (Chapter 5) did not simply "represent" risk, it enacted new forms of actors' subjectivity and moral obligation. Similarly, when the system later malfunctioned (Chapter 6), residents and staff improvised alternative accountability mechanisms, that performed accountability in more situated, relational ways. This aligns with and extends the work of scholars like Robson (1992) and

Quattrone and Hopper (2005), who have used ANT to show how accounting technologies actively shape organisational realities. However, this study goes further by highlighting the affective and ethical dimensions of these performances, how anxiety, care, and moral distress become integral to the doing of accountability.

This has two key implications for critical accounting. Firstly, accounting could act as affective practice. Tools like dashboards, health codes, and even paper logs are simultaneously neutral carriers of information and affective technologies (Boedker and Chua, 2013) that elicit and manage emotions, which in turn shape behaviour and legitimacy. Second, the findings challenge the dominance of "calculative accountability" (Baker, 2014; Power, 1997) in disaster and crisis settings. While numerical data and formal reports remained important, they were often supplemented by narrative and relational forms of accountability (Everett and Friesen, 2010) that were more responsive to local contexts and ethical demands.

*Distributing Responsibility*

Critical accounting has often focused on human actors, e.g., managers, auditors, policymakers, as the primary agents of accountability (see, e.g., Neu et al., 2013; Spence and Rinaldi, 2014). This study, in line with ANT, insists on a distributed agency that includes non-human actors. For example, quarantine seals, data dashboards, and even paper protocols actively participated in holding people accountable, often in ways that exceeded human intention or control.

When responsibility is distributed across actor-networks, it becomes harder to attribute blame or praise to individuals, which is a point underscored in controversies over malfunctioning health codes or inaccurate lockdowns (Chapter 6). This does not mean that human responsibility disappeared, rather, it becomes relational and contingent (see Section 3.5). This perspective allign with but also critiques the growing literature on "algorithmic accountability" (e.g., Gevaert et al., 2021; Pasquale, 2015), which often retains a focus on human designers or regulators. This study suggests that accountability must be understood as a network achievement, shaped by the interactions of algorithms, policies, users, and contexts.

*Methodological Implications: Tracing Accountability in Practice*

Critical accounting research has traditionally relied on discourse analysis, interviews, and document review to uncover power relations (Spence, 2009). This study demonstrates the value of following the actors, both human and non-human, across time and space, using ethnographic method to trace how accountability is assembled and reassembled in practice. This approach reveals phenomena that are often invisible in traditional analyses, such as the role of mundane artifacts (e.g., paper stickers, medicine baskets) or affective practices (e.g., care, distrust) in sustaining or undermining accountability.

### 7.6.2 Implications for Public Sector Governance Studies

*Rethinking State Control and Citizen Compliance*

Public sector governance studies have been preoccupied with questions of state capacity, policy implementation, and citizen compliance (e.g., Bovens, 2007; Mulgan, 2000). This study challenges the top-down, principal-agent models that still dominate this field. It shows that "state control" is not a monolithic force exerted from above, but a networked achievement that depends on the alignment of diverse actors, including local volunteers, digital platforms, community norms, and material infrastructures.

For example, during the strict containment phase (Chapter 5), the state's authority was enacted through a hybrid actor-network that included RC staff, health codes, quarantine seals, and volunteer systems. When this actor-network frayed (Chapter 6), state control became fragmented and contested, leading to grassroots reassemblies that often bypassed or reinterpreted official protocols. This suggests that compliance is not simply a matter of coercion or persuasion, it is a socio-material negotiation that involves continuous translation of policies into local practices.

This carries implications for the field of public administration. One of them is reconceptualising governance as an ongoing process of translation, rather than mere implementation. Policies are not simply executed in a top-down manner, but are actively interpreted, adapted, resisted, and reinvented by street-level actors in response to both material constraints and affective pressures (Lowe, 2001; Justesen and Mouritsen, 2011). This perspective further challenges the conventional notion of the state as a fixed,

pre-formed entity that exerts control over society. Instead, following Latour (2005), the state is understood as a network effect. Its authority, visibility, and even existence depend on the successful and continuous enrolment of different human and non-human intermediaries. Its power is thus not predetermined but emerges from the stabilisation of these complex socio-material networks.

*From New Public Management to Networked Public Governance*

The findings also speak to the evolution from New Public Management (NPM) to New Public Governance (NPG) (Osborne, 2010; Sørensen and Torfing, 2007). While NPM emphasised performance indicators and market mechanisms, and NPG highlights collaboration and co-production, both often retain a focus on formal structures and human intentionality. This study suggests that socio-material networks are the fundamental units of governance, especially in crises, where improvisation and adaptation are key.

For instance, the community's response to the pandemic was not directed by a single entity, but emerged from the interactions of RC staff, residents, technologies, and policies. This aligns partially with Rhodes' (1996) notion of "governance without government" but adds a material dimension: governance is not just about inter-organisational relations but about the orchestration of human and non-human actors into functional assemblages.

*Mobilising Accountability in Crisis Governance*

The findings of this study generate critical policy implications for mobilising accountability in complex and crisis-prone governance contexts. While derived from the specific socio-political landscape of China's pandemic response, these insights offer broader lessons for public sector governance.

Specifically, if accountability is understood as a dynamic and situated performance, policy frameworks should operate as adaptive infrastructures rather than rigid cages. In the context of China's "grid governance" system, this implies a need to recalibrate the balance between central directives (e.g., "Dynamic Zero-COVID") and local autonomy. This study demonstrated that rigid, top-down accountability mechanisms fragment under stress, forcing frontline actors to improvise "illegal" but necessary solutions. Therefore, future crisis governance policies should formally recognise and enable the discretionary power of

street-level bureaucrats—such as RC staff—to engage in "repair work" without fear of punitive repercussions. By legitimising the local translation of policy, governance systems can transform the fragility of central commands into the resilience of distributed networks. This is also applicable to the other centralised governance model facing crisis, that is, resilience lies not in the perfection of the command chain, but in the capacity of local actors to adapt when the chain breaks.

Moreover, the study highlights that non-human actors, particularly digital infrastructures like the Health Code, are active mediators of accountability, not neutral tools. In the Chinese context, the over-reliance on algorithmic decision-making created "accountability voids" when digital systems malfunctioned or failed to align with shifting policies. Consequently, policy interventions must incorporate provisions for the maintenance, transparency, and contestability of these non-human actors. Specifically, there is an urgent need for "human-in-the-loop" protocols that allow frontline workers to override algorithmic outputs (such as a false red code) based on situated evidence, without facing bureaucratic censure. For broader digital governance, this suggests that the legitimacy of technocratic accountability depends on the existence of analogue redundancies—such as the paper logs and "green stickers" observed in this study—which serve as essential fail-safes when digital convergence fails.

Finally, this research challenges the sustainability of crisis governance that rely heavily on top-down mobilisation without accounting for affective depletion. The affective forces, ranging from the "fear" that enforced early compliance to the "fatigue" that eroded the network later on, play a constitutive role in governance. In the Chinese context, the exhaustion of "Big Whites" (volunteers) and RC staff demonstrated the limits of ignoring the emotional costs of enforcement. Governance systems must therefore integrate "affective literacy" into their design, providing support for the emotional labour undertaken by frontline actors.

### 7.6.3 Extending ANT into Crisis Governance and Accountability

While ANT has influenced accounting and governance research, its application has largely remained within contexts of organisational change, technological implementation, and institutional standard-setting (e.g., Quattrone and Hopper, 2005; Lowe, 2001; Robson,

1992). Studies have used ANT to trace the adoption of innovations like ERP systems, the contested construction of accounting standards, or the implementation of performance management systems within relatively stable organisational fields. However, this study pushes ANT into a different domain: pandemic governance and accountability under crisis conditions. This shift is contextual and theoretical, enabling a unique contribution to both ANT and critical accounting scholarship by highlighting how accountability is assembled, contested, and reassembled in volatile environments.

Existing ANT-informed accounting research shows how accounting systems are implemented and stabilised within organisations, often focusing on moments of innovation or conflict (e.g., Briers and Chua, 2001; Jones and Dugdale, 2002). For instance, studies have examined how Activity-Based Costing networks form (or dissolve) across firms, or how financial models act as boundary objects in Public-Private Partnerships (Justesen and Mouritsen, 2011). However, these settings assume a certain degree of institutional stability and temporal continuity. In contrast, this study engages with a context characterised by radical uncertainty, rapid policy shifts, and affective intensity, which are conditions under networks form and disintegrate at an accelerated pace. This allows the study to see ANT's core translation processes operating in a heightened state, revealing aspects of socio-materiality that are less visible in more settled environments.

Specifically, this study extends ANT in three key ways. Firstly, it demonstrates how accountability becomes a matter of real-time, pragmatic reassembly rather than gradual institutionalisation. During the pandemic, accountability mechanisms (e.g., health codes, quarantine seals) were not slowly negotiated into stability but were rapidly deployed, often failing and requiring immediate re-translation. This highlights the improvisational and contingent nature of network-building in crises, where the prolonged interessement or gradual enrolment is absent. For example, the shift from digital health codes to paper-based logs (Chapter 6) was not a planned transition but a grassroots reassembly driven by necessity and distrust, that existing ANT studies in accounting have rarely captured.

Secondly, this study emphasises the affective dimensions of translation in ways that enrich ANT's traditional focus on interests and alliances. While Boedker and Chua (2013) introduced affect into ANT accounting research, their work remained within corporate strategy settings. Here, in the pandemic crisis, affects like fear, care, exhaustion, and

solidarity were active forces that shaped actor-network configurations. Fear enforced early compliance; care motivated ethical improvisation; exhaustion eroded enforcement. By tracing how affects displace and reassemble responsibility across the actor-network, this study offers a more detailed understanding of how moral and material accountability are co-produced in practice.

Thirdly, this study contributes to ANT by foregrounding temporal dislocation as a central dynamic in actor-network stability. Unlike earlier ANT studies that often implicitely assumed a linear or cyclical temporality (e.g., implementation phases, reporting cycles), this research shows how conflicting temporalities, including state policy time, algorithmic time, physiological time, community time, become sites of struggle. The dissonance between the rapid change of policies and the slower adaptation of material devices (e.g., quarantine sensors) created ruptures that led to actor-network failure and re-assembly. This temporal sensitivity is often underplayed in ANT analyses but emerges as crucial in crisis governance.

In summary, this study extends ANT into the volatile realm of crisis governance, revealing accountability as a fluid, socio-material accomplishment continuously reassembled through the interactions of human and non-human actors. By foregrounding affect, materiality, and temporal dynamics, it challenges static and anthropocentric models prevalent in both critical accounting and public sector governance research. The findings present that effective accountability in crises depends on adaptive, networked practices capable of repair and care. This reorientation invites scholars to attend to the mundane, affective, and material dimensions of governance, offering understanding of how accountability is lived and enacted in times of uncertainty.

## 7.7 Conclusion

This chapter has synthesised the empirical findings to advance a performative understanding of accountability, traced through the lens of ANT. It has argued that accountability is an emergent and fluid accomplishment, continuously enacted through the associations of human and non-human actors within dynamic actor-networks. Notably, in contrast to static or hierarchical models, this study shows that accountability is not merely implemented but perpetually reassembled in response to breakdowns, controversies, and

ethical dilemmas. The dissolution of the initial pandemic governance network did not lead to chaos but to generative reconfigurations—where grassroots actors, using low-tech tools and relational practices, reperformed accountability around values of care and solidarity.

Moreover, the analysis has demonstrated that responsibility is continually displaced across time, actors, and affects. This displacement is not a failure of governance but a constitutive feature of how accountability operates in complex, crisis environments. Temporally, responsibility shifted from the synchronised urgency of "Dynamic Zero-COVID" to the dissonant negotiations of "Precision Prevention." Across actors, it was delegated to non-human actants like health codes, reclaimed by humans in moments of ethical crisis, and redistributed through hybrid formations such as paper-based logs and community verification systems. Affectively, responsibility was governed through the circulation of fear, fatigue, and care, which actively shaped—and were shaped by—sociomaterial arrangements.

The study also highlighted the value of ANT in uncovering the often-overlooked dimensions of governance: the everyday rituals through which policies are enacted, the emotional labour that sustains or undermines networks, and the material devices that shape what accountability and governance can mean in practice.

This study carries implications for both critical accounting and public sector governance studies. By challenging static, hierarchical, and human-centric models of accountability, the performative perspective of accountability necessitates a shift in focus—from evaluating formal accountability mechanisms to tracing how accountability is practically assembled, contested, and reperformed in everyday practices, especially under conditions of crisis. For critical accounting, this means recognising accounting as an affective and ethical practice, co-produced by technologies, emotions, and mundane artefacts. For public sector governance, it implies reconceiving state control and citizen compliance as emergent effects of networked relations rather than top-down impositions. Also, by extending ANT into the volatile context of pandemic governance, this study presents its unique capacity to capture the temporal, affective, and socio-material processes.

# Chapter 8: Conclusion

## 8.1 Recap of Research Aims and Findings

This thesis embarked on an empirical and theoretical journey to reconceptualise accountability not as a static institution or a hierarchical mechanism, but as a dynamic, emergent, and socio-material practice. The central research question guiding this inquiry was: *How is accountability enacted, distributed, and reassembled through socio-material networks during COVID-19?* This question was further refined through subsidiary questions exploring the constitutive roles of technologies, legal devices, community practices, and affective forces in both forming and destabilising accountability relations. The primary aim was to address a significant gap in the literature, which predominantly conceptualises accountability in "hierarchical, institutional, and human-centred terms" (e.g., Mulgan, 2000; Bovens, 2007; Sinclair, 1995), thereby overlooking the complex, performative processes through which it is actually accomplished in everyday life, especially under crisis conditions.

To achieve this aim, Actor-Network Theory (ANT) was adopted as both a theoretical lens and a methodological strategy. Unlike traditional frameworks—such as principal-agent theory, which reduces accountability to a principal-agent relationship, or institutionalism, which prioritises pre-existing social structures—ANT posits that agency and order emerge from the associations between heterogeneous human and non-human actors. This ontological commitment allowed the research to capture the inherent fragility and temporal dynamism of accountability networks, which were perpetually in-the-making through the alignment (and misalignment) of actors like health codes, policy documents, community workers, and residents. By mandating a focus on the mundane practices of everyday governance (e.g., the ritual of scanning a QR code), ANT revealed how macro-policies were enacted and contested in micro-interactions, a process that structural approaches often overlook. Furthermore, ANT's principle of generalised symmetry enabled the study to take seriously the constitutive role of affect (e.g., fear, care) and materiality as active forces shaping accountability relations, moving beyond anthropocentric explanations. Ultimately, ANT's unique power lay in its ability to deconstruct the apparent solidity of "state control"

and “citizen compliance,” showing instead that both are precarious outcomes of networked socio-material practices, thus offering a far more nuanced understanding of governance in crisis.

ANT’s ontological commitment shaped the research design: a phase-based qualitative case study of an urban Chinese community during the COVID-19 pandemic. Data were generated through a multi-method approach combining ethnographic observation, semi-structured interviews, digital ethnography, and inscription analysis. This strategy was chosen to operationalise ANT's methodological imperative to "follow the actors" and trace the temporal unfolding of accountability relations across both physical and digital sites.

The empirical findings, detailed across Chapters 5, 6, and 7, demonstrate that accountability is not a fixed attribute possessed by institutions or individuals. Instead, it is a precarious, emergent effect of networked relations and interactions. Chapter 5 charts the initial assembly of the governance network, detailing how heterogeneous actors were aligned to construct a stable order under the obligatory passage point of “collective containment”. Chapter 6 subsequently follows the destabilisation of this network, revealing how policy incoherence and infrastructural decay necessitated a grassroots reassembly of accountability through resistance and improvisation. Finally, Chapter 7 synthesises these empirical trajectories to conceptualise accountability where responsibility is continuously displaced across time, actors, and affects. The journey of discovery can be synthesised around five core findings that directly address the research questions.

First, accountability is a performative accomplishment, not a pre-possessed commodity. The study reveals that accountability is something actors do, not something they have. It is brought into being through repeated, mundane practices, rituals, and material arrangements. The early pandemic response offers a powerful illustration. The health code system was far more than a tool, it was a central actant in the performance of accountability. Residents performed accountability through the daily ritual of scanning QR codes, a "digital speech act" that granted passage and affirmed one’s status as a "safe" biological citizen. Similarly, physical quarantine seals functioned as "moral inscriptions" that made accountability "visible, tangible, and unavoidable," enrolling neighbours into a network of surveillance and transforming private spaces into sites of public scrutiny. This performative perspective challenges dominant "possession" models of accountability found in public administration

literature (e.g., Mulgan, 2000; Bovens, 2007), which tend to reify accountability into an abstract ideal or a bureaucratic output. This finding answers the central question regarding how accountability is enacted through material and ritual practices, moving beyond abstract definitions to show its situated, embodied nature.

Second, non-human actors are constitutive participants in accountability practices. A key contribution of this study is its demonstration that technologies and artefacts are not passive instruments but active mediators that transform, translate, distort, and modify the meaning or the elements they are supposed to carry. The health code acted as a powerful obligatory passage point (OPP) that all actors were forced to negotiate. Its authority emerged not solely from a top-down mandate but from its integration into a dense network of human practices. Moments of breakdown, such as the "false red code" incidents, revealed the fragility of this socio-material accomplishment and exposed the hidden work required to maintain the system. Beyond the health code, other non-human actants played crucial roles: WeChat groups became "hybrid forums'" where accountability was contested; community data dashboards acted as "spokespersons" legitimising actions through a discourse of numerical objectivity; and even low-tech objects like paper ledgers became key performers when digital systems failed. To focus only on human actors, the thesis argues, is to miss more than half of the performance of accountability. This finding addresses the research sub-question concerning the role of non-human actors, such as technologies and legal devices, illustrating that accountability is co-produced by human and non-human actors in continuously evolving networks.

Third, accountability networks are inherently fragile and temporally dynamic. The study traces how the carefully assembled actor-network of the early pandemic destabilised under the pressure of policy shifts, technological decay, and actor fatigue. This highlights that actor-network stability is a provisional achievement, contingent on continuous maintenance and alignment. A central finding is the temporal displacement of responsibility. What constituted a "responsible" action at one moment became contested or obsolete at another. The initial phase of "synchronised responsibility" under "Dynamic Zero-COVID" enforced a presentist focus on immediate viral containment through disciplined rituals. However, as policies shifted to "Precision Prevention," the community entered a state of dissonance. National policies changed faster than material infrastructures could adapt, leading to conflicts where residents wielded new policy documents as

"material witnesses against outdated enforcement". This dislocation gave rise to "asynchronous responsibility," where actors improvised their own temporalities, such as creating supplementary health logs, leading to a redefinition of responsibility from short-term containment to long-term, care-oriented co-existence. This finding responds to the question of how accountability is distributed and reassembled over time, showing its contingent and evolving nature in response to policy, technology, and affective shifts.

Fourth, affective forces are crucial to the enactment and reassembly of accountability. The research provides a detailed tracing of how "affective displacement" governs responsibility. In the early phase, accountability was enforced through the mobilisation of fear and anxiety, with the health code acting as an "affective technology" that triggered immediate physiological compliance. As the actor-network frayed, affects of fatigue, frustration, and distrust became active forces that eroded enforcement and led to withdrawal. Crucially, the study shows how positive affects like care and compassion became powerful actants for ethical reassembly. The moral distress of a Big White volunteer forced to seal an asthmatic child's door was not just an individual emotion but a "network event" that triggered re-translation, motivating acts of improvisation and the creation of new, care-based protocols. This demonstrates that affect is a truly existent force that shapes actor-network dynamics, holding networks together or tearing them apart. This directly engages with the sub-question on the role of non-human actors, demonstrating that accountability is not only rational or procedural but deeply emotional and relational.

Finally, effective accountability in crises emerges from adaptive, bottom-up reassembly, not just top-down control. When the formal actor-network disintegrated, it did not culminate in chaos but in a phase of "grassroots reassembly." Through "tactical disobedience" and "pragmatic improvisation," actors on the ground reconfigured accountability around practices of care and solidarity. Residents created alternative systems like handwritten health logs and neighbour-verified "green stickers." Mutual-aid networks delivered groceries and medicine, performing a different kind of accountability based on "relational obligations and moral duty to one's neighbour" rather than compliance with a remote algorithm. This reassembly challenges the dualistic lens of "state control" versus "citizen compliance," showing instead that both are emergent effects of dynamic, socio-material networks that are continuously performed and negotiated.

In summary, the study has conceptualised accountability as a socio-material performance, tracing its dynamic enactment through the associations of human and non-human actors. It has shown that accountability in such public health emergency is relational, contingent, affective, and perpetually in-the-making. The findings necessitate a fundamental rethinking of accountability, moving from a static model of "possession" to a dynamic understanding of "actor-relational responsibility." This theoretical reorientation, grounded in the empirical reality of pandemic governance, forms the basis for the contributions that the following section will elaborate upon.

## 8.2 Research Contributions

This study makes a threefold contribution, advancing scholarly debates in critical accounting, public sector governance, and Actor-Network Theory itself. By applying an ANT lens to the lived reality of pandemic governance, it challenges entrenched assumptions and opens up new avenues for understanding accountability in complex, crisis contexts.

First, the research constitutes a significant advance for critical accounting scholarship. It moves the field beyond a predominant focus on disclosure, reporting, and calculative practices by theorising accountability as a socio-material performance. Whereas traditional accounting literature often treats accountability as a commodity to be discharged or a narrative to be told (e.g., Baker, 2014; Sinclair, 1995), this study demonstrates that it is an ongoing accomplishment enacted through the entanglement of human actors, technologies, and affective forces. The findings show that tools like health codes and quarantine seals were not merely instruments of accountability but active participants in its creation, shaping behaviours, subjectivities, and moral boundaries. This shifts the analytical focus from what is accounted for to how accounting is done in practice, highlighting the mundane, material, and often contested processes through which accountability is realised. Furthermore, by demonstrating how affect—such as fear, fatigue, and care—is integral to these performances, the study challenges rationalist models and positions accounting as an affective practice (Boedker and Chua, 2013), thereby enriching the ethical and political dimensions of critical accounting inquiry.

Second, the study offers extension to public sector governance studies. It challenges the top-down, state-centric models that dominate analyses of crisis management, particularly in authoritarian contexts like China. By revealing that "state control" and "citizen compliance" are not pre-defined conditions but emergent, networked effects, the research recasts governance as a distributed achievement. The empirical evidence shows that the authority of the state was enacted through a fragile assemblage that included street-level bureaucrats, community volunteers, digital platforms, and material artefacts. When this actor-network fractured, governance was reconstituted from below through grassroots practices of care and solidarity. This insight challenges the conventional literature that resilient governance depends primarily on top-down institutions (e.g., Bovens, 2007; Hood, 1983). Instead, it suggests that effectiveness in crises hinges on the adaptability of socio-material networks and the capacity for bottom-up reassembly. Thus, in direct response to the question about the nature of governance and responsibility in crisis, this study reveals that governance is an emergent, networked, and often improvised practice, while responsibility is a relational and temporally fluid obligation, reconfigured through everyday acts of care, negotiation, and repair.

Finally, this research enriches Actor-Network Theory by stretching its application into the domain of crisis governance. While ANT has been applied in studies of organisational accounting and technological stabilisation, this study demonstrates its potency for capturing the intense, real-time dynamics of actor-network formation, failure, and reassembly under conditions of uncertainty. The study highlights aspects often underplayed in ANT analyses, particularly the role of temporal dislocation—the conflicts between policy time, algorithmic time, and community time—as a central driver of actor-network transformation. It also illustrates how affective intensities operate as powerful non-human actants that can bind or break associations, extending ANT’s traditional focus on interests and alliances. By tracing how accountability was rapidly reassembled through practices of care and repair, the study shows ANT’s utility for analysing not only stability but also adaptive resilience. In doing so, it addresses criticisms of ANT’s lack of critical bite by foregrounding the ethical and political consequences of socio-material arrangements, demonstrating how a focus on mundane practices can reveal the workings of power and responsibility in times of crisis.

## 8.3 Limitations of the Study and Avenues for Future Research

While this study offers a understanding of accountability as a socio-material accomplishment through the lens of ANT, it is important to acknowledge its limitations. These limitations open avenues for future research and encourage a reflexive consideration of how accountability is studied in complex, real-world settings.

### 8.3.1 Limitations of the Study

*The Single-Case Study Design*

This research employed a qualitative single-case study design, focusing on one urban community in Southern China. This approach was chosen to align with ANT's ontological commitment to depth and richness (Latour, 2005; Law, 2004). It allowed for a detailed tracing of the socio-material practices through which accountability was assembled, stabilised, and reassembled over time. This design necessarily limits the external validity of the findings (Yin, 2018). The study makes no claim that the specific accountability configurations documented here are directly representative of all Chinese communities, or other national and cultural contexts.

However, whilst a single-case design precludes statistical generalisation to a wider population—a limitation often highlighted within positivist paradigms—it offers distinct advantages for the generation of theoretical insights. Drawing on Parker and Northcott (2016), this study pursues "analytical generalisation," where the objective is not to extrapolate data to all Chinese communities, but to generalise the theoretical propositions regarding socio-material accountability to other contexts. In this vein, this design enabled a "thick description" of the micro and affective dynamics of governance that a multi-site or quantitative study would likely obscure.

The community functions here as a "telling case" (Mitchell, 1984), selected not for its statistical typicality, but for its theoretical salience: its functional completeness and its intense experience of a "managed" crisis provided a unique laboratory to observe the assembling and disassembling of accountability networks. Consequently, the concepts developed here—such as "affective displacement" and "asynchronous responsibility"—possess a transferability (Parker and Northcott, 2016) that extends beyond the specific

geographical boundaries of the site.

*Research Access and Fieldwork Constraints under Pandemic Conditions*

Conducting ethnographic research during a pandemic introduced significant practical constraints. Physical access restrictions during strict lockdowns (especially in Phase 1) meant that initial data collection relied heavily on digital ethnography and remote interviews. While this provided real-time access to WeChat group dynamics, it limited the researcher's ability to observe embodied interactions, non-verbal cues, and the materiality of the community space during its most chaotic period. For example, the tension at the community gate had to be reconstructed from interviews and digital messages rather than through direct observation during the earliest lockdowns.

Furthermore, the politically sensitive nature of pandemic governance in China inevitably influenced the research context. While ethical protocols were followed to ensure anonymity and minimise harm, the particular political climate required heightened sensitivity. This may have influenced participant responses, as individuals might have been more cautious about sharing criticisms of government policy or local officials, despite firm assurances of confidentiality. This is a recognised challenge in research within sensitive contexts (Geraldine, 2000) and necessitates a critical and reflexive reading of the raw data. Notably, appreciating this particular political context is perhaps not as a limitation to be overcome, as it offers critical insights into how accountability is assembled under a specific governance model.

The researcher's positionality as an insider-outsider, with linguistic and cultural competence, but also a perceived association with a foreign university, also shaped the fieldwork. This position facilitated access and trust in many instances but may have also led to social desirability bias in interviews, where participants tailored their narratives to what they perceived as the researcher's expectations (Nowicka and Ryan, 2015). The reflexive accounting of this positionality, as detailed in Chapter 4, is a supplement, but it cannot fully eliminate its effects on the knowledge produced.

*Theoretical Boundaries*

A final limitation concerns the theoretical framework itself. While ANT constitutes a

powerful lens for tracing the micro-processes of association and translation, it has been criticised for its lack of critical bite and its reluctance to engage with pre-existing social structures (Whittle and Spicer, 2008). By adhering to a flat ontology, the analysis presented in this thesis prioritises the how of network assembly over the why of structural domination, potentially underplaying the pervasive and often oppressive power of the state.

Consequently, phenomena that this study conceptualised as "network effects" or "socio-material performances" could, through a different theoretical lens, be interpreted in terms of Foucauldian biopolitics. For instance, the algorithmic sorting of residents described in Chapter 5 might be viewed as the production of biopolitical subjectivities or biopolitical entities, while the quarantine measures could be analysed as a direct biopolitical intervention designed to maintain a specific biopolitical order of the population. The breakdown of governance would thus not merely be a network failure, but a crisis of biopolitical governance and state legitimacy.

While some scholars have sought to combine ANT with such critical thematisation to capture these dimensions (e.g., Chua, 1995; Skærbæk and Tryggestad, 2010), others have noted the significant ontological controversies and difficulties involved in blending these distinct perspectives (Modell, 2009; Jacobs, 2012). This study, in choosing to remain faithful to ANT's methodological symmetry, inevitably limited its capacity to fully critique these biopolitical state powers. This limitation, however, points directly to an area for further inquiry, as discussed below.

### 8.3.2 Avenues for Future Research

*Integrating ANT with Critical Social Theory*

Building on the theoretical limitations identified above, future research could explicitly aim to bridge the gap between ANT's descriptive richness and the structural critiques offered by critical social theories. While this study hinted at the biopolitical implications of pandemic governance, future scholarship could more rigorously integrate ANT with Foucauldian governmentality studies to explain why certain assemblages stabilise while others fail. How do discourses of "biosecurity" or "resilience" shape the enrolment of actors? How do historical legacies of state-society relations in China prefigure certain forms of accountability? Similarly, engaging with Bourdieusian field theory could help

analyse how cultural capital and social hierarchies influence who gets to speak for the actor-network or whose knowledge counts in moments of controversy (Bourdieu, 1977).

Furthermore, feminist STS and care ethics (e.g., Mol, 2008; Tronto, 1993) could enrich ANT's understanding of affect and relationality. This study highlighted how care practices became central to accountability reassembly, future research could more explicitly theorise the gendered dimensions of this labour. Who performs the affective work of maintaining accountability networks? How are care and control intertwined in different cultural contexts? Such integrations would strengthen ANT's ability to address broader social and political questions.

*The Role of Advanced Technologies*

This study examined relatively low-tech digital tools (health codes, WeChat) and even analogue artefacts (paper logs, medicine baskets). However, governance is increasingly shaped by advanced technologies such as AI-driven predictive analytics, Internet of Things (IoT) sensors, and big data platforms. Future research should investigate how these technologies transform the socio-material performance of accountability.

For instance, how do AI algorithms that predict infection risks redistribute responsibility between humans and machines? How do citizens contest or negotiate the authority of black-boxed systems? What new forms of resistance or adaptation emerge? Research in this area could engage with literature on algorithmic governance (Zuboff, 2024; Yeung, 2018) and data justice (Taylor, 2017), exploring how accountability is reconfigured in increasingly datafied societies.

*Valuing Care Labour in Governance Infrastructures*

This study documented the immense, often invisible, affective labour (Hochschild, 2002) performed by RC staff, volunteers, and even residents in sustaining accountability through practices of care. Current public administration and accounting frameworks are ill-equipped to recognise or value this form of labour. Future research should investigate how to make this care work visible and accountable itself. Could new accounting and governance models be developed that audit and reward the maintenance of relational trust and community solidarity, rather than just compliance with predefined metrics? This would

involve creating what Mol (2008) might call a “logic of care” into the domain of performance management systems, challenging the dominance of the “logic of choice” and calculative rationality.

*Global Norms for Local Assemblages*

The Chinese context of this study presents a distinct configuration of society-technology relations. However, the pervasive use of digital accountability tools (e.g., vaccine passports, contact tracing apps) was a global phenomenon. A crucial future direction is to conduct cross-cultural ethical analyses of socio-material accountability. How do different cultural values (e.g., collectivism vs. individualism) and political traditions shape what is considered an ethical or unjust accountability practice? Research could explore, for example, how a practice like “manual override” (as seen in this study) is legitimised in different contexts, or how notions of privacy and the common good are negotiated within different governance networks. This can contribute to the development of a non-Western-centric global ethics for digital governance.

## 8.4 Closing Remarks on Research Journey

This research journey has been as much about the process of inquiry as it has been about its findings. Embarking on a study during an ongoing pandemic was an exercise in embracing uncertainty, both as an empirical reality and a methodological condition. The commitment to "follow the actors" led me down unpredictable paths, from the digital forums of WeChat groups to the material politics of a quarantine seal on an apartment door. This was not a neat, linear process, but an iterative process of tracing associations, where the research question itself was refined through encounters with the field. The pandemic context imposed significant constraints on physical access, particularly during strict lockdowns, yet this limitation opened up innovative methodological avenues. It necessitated a reliance on digital ethnography and remote interviews, which, while presenting challenges in capturing embodied interactions, provided a unique, real-time window into the unfolding crisis and the rapid formation of accountability discourses online.

This methodological experimentation—blending ethnographic observation with inscription analysis—proved essential to operationalising ANT's core tenets. The multi-method approach allowed me to trace how accountability was not only enacted in face-to-face interactions but also inscribed into policy documents, coded into algorithms, and debated on digital platforms. "Following the actors" meant attending equally to the RC staff's emotional labour and the material agency of a glitching health code. This symmetrical approach was challenging, requiring a constant vigilance against the deep-seated anthropocentric bias in social research. However, it was this commitment that revealed the most important insight: that more than half of the drama of accountability was performed by non-human actors.

Ultimately, this journey shows that understanding complex, networked phenomenon like pandemic governance requires methodological frameworks that are as fluid, adaptive, and attentive to socio-materiality as the phenomena themselves. The "traces of accountability" documented in this thesis are the products of a specific, situated inquiry, yet the theoretical and methodological reorientation it proposes holds broader relevance. It suggests that the future of studying accountability and governance, particularly in times of crisis, lies in approaches that can navigate the intricate, often invisible, webs of human and non-human relations that constitute the world.

# Appendix 1: Interviews Summary

| Participant Category | Number of Participants | Interviews Conducted | Average Interview Duration | Data Collection Period (Phases) | Key Thematic Focus Areas |
|---|---|---|---|---|---|
| **Residents Committee (RC) Staff** | 8 | Approx. 12-15 (some interviewed multiple times) | 60-75 minutes | Phase 1, Phase 2, Phase 3, Phase 4 | • Role transformation and identity<br>• Interpretation and enforcement of policies<br>• Interactions with technology (health codes, dashboards)<br>• Moral distress and ethical dilemmas<br>• Relationships with residents and volunteers |
| **Residents** | 22 | 22 (one primary interview per participant, with follow-up clarifications) | 50-90 minutes | Phase 1, Phase 2, Phase 3, Phase 4 | • Lived experience of lockdowns and restrictions<br>• Perception of and interaction with RC and health technologies<br>• Participation in (or resistance to) accountability measures<br>• Involvement in mutual aid and informal networks<br>• Shifting trust in systems and actors over time |
| **Volunteers ("Big Whites" - 大白)** | 6 | Approx. 8-10 (some interviewed multiple times) | 45-70 minutes | Phase 1, Phase 2, Phase 3, Phase 4 | • Motivation for volunteering<br>• Evolving role between RC and residents<br>• Use of material artefacts (PPE, delivery systems)<br>• Experiences of fatigue and changing legitimacy<br>• Practices of care and improvisation |
| **Local Business Owners** | 3 | 3 | 60 minutes | Phase 1, Phase 2, Phase 3, Phase 4 | • Adaptation of business models to pandemic rules<br>• Negotiations with RC and customers<br>• Economic impact and coping strategies<br>• Use of digital platforms (e.g., WeChat Mini-Programs) |
| **Municipal Health Inspectors** | 3 | 3 | 45-60 minutes | Phase 2, Phase 3 | • Role in oversight and guidance of RC work<br>• Perspective on policy implementation at the local level<br>• Challenges of standardising measures across communities |

# Appendix 2: Phases and Temporal Focus of Interview

| Phase | Period | Interview Focus | Primary Method |
|---|---|---|---|
| Phase 1: Initial Response & Actor-Network Formation | Early 2020 - Mid 2020 | • Rupture of pre-existing routines<br>• Emergent problematisation<br>• Initial chaos and improvisation | Retrospective interviews, complemented by analysis of digital traces (archived WeChat messages, early policy documents). |
| Phase 2: Provisional Stabilisation & Enrolment | Mid 2020 - Late 2021 | • Formalisation of roles and routines<br>• Processes of enrolment and mobilisation<br>• Experiences with stabilised systems (health codes, SOPs) | Semi-structured interviews focusing on recollections of normalisation and stabilisation. |
| Phase 3: Policy Softening & Actor-Network Fraying | Late 2021 - Late 2022 | • Experiences with policy ambiguity<br>• Points of failure and resistance<br>• Erosion of trust and actor fatigue | Targeted interviews following specific controversies. |
| Phase 4: Re-translation & Grassroots Reassembly | Late 2022 - Mid 2023 | • Grassroots improvisation and bricolage<br>• Logic of reassembly and new accountability configurations<br>• Reflections on the pandemic trajectory | Interviews and focused ethnography with key actors in reassembly efforts (e.g., Building Representatives). |

# Appendix 3: Examples of Interview Questions

| Sample Questions for RC Staff |
| --- |
| 1. Can you describe your role and responsibilities in the community before the COVID-19 pandemic?<br>2. What were the main communication channels and tools you used with residents beforehand? |
| 3. What was the biggest challenge for the RC when the pandemic first hit? How did your role change?<br>4. What were the first directives you received from higher authorities, and how clear were they?<br>5. How did residents initially react to the new restrictions? Can you describe a specific early conflict or challenge? |
| 6. What new tools or technologies were you given to manage the crisis (e.g., health code system, dashboards, quarantine seals)? How were you trained to use them?<br>7. How did you work with volunteers ("Big Whites")? How were their roles defined?<br>8. What strategies were most effective in persuading residents to comply with the new rules? |
| 9. How did you communicate changing policies to residents? How did you manage rumours or misinformation?<br>10. The community data dashboard became an important source of information. How was it used, and how did residents respond to it?<br>11. Were there times when you had to make decisions that went against your personal judgment or a resident's plea because of a strict rule or a system alert (e.g., a red code)? |
| 12. Tell me about a time when a technological system (e.g., health code, data dashboard) failed or caused a major problem. How did you handle it?<br>13. How did policy documents (PDFs, notices) shape your daily actions and your interactions with residents? |
| 14. How did the shift to "Precision Prevention" policies change your work? What new challenges did it create?<br>15. Describe a situation where you had to bend a rule or find a workaround to help a resident or solve a problem.<br>16. How did the stress and fatigue of long-term crisis management affect you and your team? |

| Sample Questions for Residents |
| --- |
| 1. Can you tell me a bit about yourself and how long you have lived in this community?<br>2. Before the pandemic, what was your relationship with the RC and your neighbours? How did you typically communicate? |
| 3. Can you describe what changed for you and your community when the pandemic first started? What was the biggest problem or challenge you faced?<br>4. Where did you get information about the virus and the new rules? Was there conflicting information? Who or what did you trust?<br>5. Can you describe a specific moment when you realised "life is not normal anymore"? |
| 6. What were the main rules or tools you had to follow/use (e.g., health code, temperature checks)? How did you learn about them?<br>7. Who were the key people you had to interact with to get through lockdowns? (e.g., RC staff, volunteers, neighbours).<br>8. Were there any tools or rules that were particularly effective (or ineffective) in getting people to cooperate? Why? |

| |
|---|
| 9. How did you know what the ‘official’ rules were? Who or what was the most trusted source of information?<br>10. Were there ever disagreements about what was the right thing to do? How were these disagreements resolved?<br>11. Tell me about the "Big Whites" (volunteers). What was their role, and how did you view them? |
| 12. Tell me about a time the health code/QR scanner/quarantine seal didn’t work as expected. How did you and others react? What was the outcome?<br>13. How important was your smartphone and WeChat during this period? Can you give an example of how it helped or complicated things? |
| 14. Were there times you felt a rule was unfair or impractical? What did you do? Did you and others find alternative ways to get things done?<br>15. Tell me about any mutual aid or neighbour-helping-neighbour activities you were involved in. How did they start?<br>16. How did things change as the pandemic went on for months/years? Did the rules, or how people followed them, change? |

| **Sample Questions for Volunteers** |
|---|
| 1. What motivated you to become a volunteer ("Big White") during the pandemic?<br>2. Did you have any prior connection to the RC or community work? |
| 3. How were you recruited and trained? What were your responsibilities(things to do)?<br>4. What resources were you given (e.g., protective suits, IDs)? How did these items affect how you were perceived? |
| 5. Can you describe a typical day for you during the strictest lockdown period?<br>6. You were between the RC and the residents. How did you navigate that role? Were you ever caught in the middle of a disagreement?<br>7. What was the most difficult situation you faced as a volunteer? |
| 8. How did you use technology like WeChat or health code apps in your work?<br>9. Tell me about the significance of the protective suit ("Big White" uniform). How did it make you feel, and how did others react to it? |
| 10. How did your role and the community's attitude towards volunteers change as the pandemic dragged on?<br>11. Why did you stop volunteering (or why do you continue)?<br>12. Can you describe an instance where you and other volunteers created your own solution to a problem that wasn't covered by the official rules? |

| **Sample Questions for Local Business Owners** |
|---|
| 1. How did the pandemic and the lockdown policies directly impact your business?<br>2. What was the biggest problem you had to solve to keep your business running? |
| 3. What rules did you have to follow regarding health codes, customer limits, or sanitation?<br>4. How did you adapt your business model (e.g., contactless delivery, pre-orders via WeChat)? Did you get any help from the RC or others?<br>5. Were there tensions between following public health rules and meeting your customers' needs or making a living? |

| Sample Questions for Municipal Health Inspectors |
| --- |
| 1. Can you describe your role and responsibilities concerning Residents Committees (RCs) before the COVID-19 pandemic?<br>2. How often did you interact with the RCs in communities like this one, and what was the nature of that interaction? |
| 3. When the pandemic began, how were the new national and municipal health policies communicated to you, and then to the RCs?<br>4. What were the biggest challenges in translating broad policy guidelines (e.g., "Dynamic Zero-COVID") into actionable, on-the-ground protocols for a specific community?<br>5. In the early days, did you perceive a gap between the policies you were conveying and the RC's capacity to implement them? |
| 6. What was your primary method for ensuring compliance and monitoring the RC's implementation of pandemic measures? (e.g., audits of data dashboards, spot checks, review of logs).<br>7. What things were most critical for your oversight role? (e.g., specific reporting software, data formats, the health code backend system?).<br>8. How did you handle situations where an RC's report or the data from the community (e.g., case numbers) seemed inconsistent or raised questions? |

| General Questions (Applicable to Multiple Groups) |
| --- |
| 1. Looking back, what do you think the community did well during the pandemic? What could have been done better?<br>2. How do you think this experience has changed the relationships(You to RC staff/your team, neighbours, volunteers, family) within it in the long term?<br>3. If another crisis happened, what from this experience would you want to keep, and what would you change? |
| 4. Thinking back, who else was important in making things happen (or not happen) during the pandemic here?<br>5. Were there any specific tools, or even documents that became especially important during that time? |

# Appendix 4: Official Government Pandemic Policy Documents

| Document Name | Issuing Authority | Date of Issuance | Key Focus / Significance |
|---|---|---|---|
| Protocol for COVID-19 Prevention and Control (1-9th Edition) | National Health Commission (NHC) | Specific date varies | Technical guidelines for local health authorities on testing, contact tracing, isolation, and disinfection. It represented a routine update to the core prevention framework. |
| Guidelines for the Home-based Care of Patients with Mild COVID-19 Infections (Trial) | Joint Prevention and Control Mechanism of the State Council | 15-Mar-22 | A significant shift, allowing asymptomatic and mild cases to isolate at home instead of centralised facilities, reflecting the lower severity of the Omicron variant. |
| Twenty Measures for Optimising COVID-19 Response | Joint Prevention and Control Mechanism of the State Council | 28-Jun-22 | Further refined control measures to reduce socioeconomic impact. It included reducing frequency of mass testing, streamlining lockdown zones, and adjusting criteria for defining risk areas. |
| Ten New Measures for Optimising COVID-19 Response | Joint Prevention and Control Mechanism of the State Council | 7-Dec-22 | A decisive move towards reopening. It ended mandatory 健康码 (health code) checks for most public places, allowed home isolation for most cases, and restricted large-scale lockdowns. |
| Overall Plan for Implementing Class B Infectious Disease Management for COVID-19 | National Health Commission (NHC) | 26-Dec-22 | The foundational legal document for the historic shift from treating COVID-19 as a Class A to a Class B infectious disease, effectively ending the core zero-COVID policy from January 8, 2023. |
| Overall Plan for the Prevention and Control of COVID-19 in the Transition Period After Its Management Is Downgraded | Joint Prevention and Control Mechanism of the State Council | 27-Dec-22 | Outlined detailed measures for the transition period, focusing on vaccinating the elderly, ensuring medical supply, strengthening rural healthcare, and monitoring new variants. |

# Appendix 5: Summary of Community Documents and Data

| Document / Data Type | Source / Origin | Period Covered | Description |
|---|---|---|---|
| **RC Compliance Logs** | Residents Committee | 2020–2023 | Records of quarantine compliance, sensor alerts, policy violations, and resident disputes. |
| **WeChat Group Messages** | Community WeChat Groups/Residents/RC Staff/Volunteers | 2020–2023 | Real-time discussions, policy debates, rumor sharing, mutual-aid coordination, voice messages. |
| **Community Emotional Survey Questionnaires** | Residents Committee | Nov-23 | Survey of frontline workers (RC staff, volunteers) on mental health, moral distress, triggers. |
| **Handwritten Health Logs / Green Stickers** | Residents & RC Staff | 2021–2023 | Low-tech supplements to digital health codes; used for local verification and access. |
| **RC Standard Operating Procedures (SOPs)** | Residents Committee | Aug-20 | Formalized protocols for code checks, quarantine management, testing, and communication. |
| **Data Dashboard Screenshots** | Community Lobby / WeChat Mini-Program/WeChat Groups | July 2020 onward | Real-time display of cases, quarantine status, resource levels. Frozen in late 2022. |

# Appendix 6: Summary of Ethnographic Observations

| Observation Site | Total Approx. Hours | Primary Focus of Observation | Key Actors |
|---|---|---|---|
| Community Gates & Checkpoints | ~40 hours | The frontline negotiation of entry permissions, temperature checks, and health code scans. | Residents, RC Staff, Volunteers ("Big Whites"), Health Code Interfaces, Infrared Thermometers, Physical Barriers, Policy Notices. |
| Residents' Committee (RC) Office | ~35 hours | The translation hub where policies were interpreted, data were recorded into dashboards/logs, and disputes were mediated. Dealing with system errors, and managing residents and volunteers relations. | RC Directors & Staff, Municipal Inspectors, Data Dashboards, Internal SOPs, Policy Documents, Communication Logs, Telephones, WeChat Admin Platforms. |
| Resident Gatherings (Nucleic Acid Testing queues, groceries distribution points) | ~25 hours | Queuing behaviours, informal communication, mutual-aid sharing. | Residents, Volunteers, Nucleic Acid Test Administrators, Queuing Systems, Spatial Arrangements, Shared Resources (e.g., medicine baskets). |
| Digital Space: Community WeChat Groups | N/A (Continuous) | The digital public sphere for official announcements, policy debates, rumour sharing, mutual aid organisation. Focus on the evolution of discourse, emergence of controversies, and role of platform affordances (e.g., persistence, screenshots). | Residents, RC Staff, Volunteers, Text/Voice/Image Messages, Policy Document Screenshots, Health Code Screenshots, Platform Features. |
| Domestic Settings | ~10 hours | How governance protocols permeated private life. Focus on residents' interactions with health apps, management of home quarantine, reception of deliveries, and family discussions about rules and risks. | Residents and their family Members, Smartphones/Health Apps, Quarantine Seals, Delivered Goods, Home Spaces. |
| Building Lobbies & Common Areas | ~10 hours | Observation of new socio-material practices such as the operation of shared "medicine baskets," posting of community-generated notices, and interactions facilitated by Building Representatives. | Residents, Building Representatives, Shared Medicine Baskets, Community Green Stickers, Handwritten Notices, Physical Proximity. |

# Reference


Adams, C. A., and Abhayawansa, S. (2022). Connecting the COVID-19 pandemic, environmental, social and governance (ESG) investing and calls for 'harmonisation'of sustainability reporting. *Critical Perspectives on Accounting*, 82, pp. 102309.

Ahmad, S., Connolly, C., and Demirag, I. (2021). Testing times: governing a pandemic with numbers. *Accounting, Auditing & Accountability Journal*, 34(6), pp. 1362-1375.

Abu-Tapanjeh, A. M. (2009). Corporate governance from the Islamic perspective: A comparative analysis with OECD principles. *Critical Perspectives on accounting,* 20(5), pp. 556-567.

Almquist, R., Grossi, G., Van Helden, G. J., and Reichard, C. (2013). Public sector governance and accountability. *Critical perspectives on Accounting,* 24(7-8), pp. 479-487.

Aucoin, P., and Jarvis, M. D. (2005). *Modernizing government accountability: A framework for reform.* Ottawa: Canada School of Public Service.

Aucoin, P., and Heintzman, R. (2000). The Dialectics of Accountability for Performance. *Governance in the Twenty-First Century: Revitalizing the Public Service, pp.* 244.

Ahrens, T. and Ferry, L. (2021). Accounting and accountability practices in times of crisis: a Foucauldian perspective on the UK government's response to COVID-19 for England. *Accounting, Auditing & Accountability Journal*, 34(6), pp. 1332–1344.

Ahrens, T., and Chapman, C. S. (2007). Management accounting as practice. *Accounting, organizations and society,* 32(1-2), pp. 1-27.

Austin, J. L. (1975). *How to do things with words*. Harvard university press.

Alvesson, M., and Spicer, A. (2012). A stupidity-based theory of organisations. *Journal of management studies,* 49(7), pp. 1194-1220.

Alvesson, M., and Sköldberg, K. (2017). *Reflexive methodology: New vistas for qualitative research.*

Agostino, D., Saliterer, I., and Steccolini, I. (2022). Digitalization, accounting and accountability: A literature review and reflections on future research in public services. *Financial Accountability & Management,* 38(2), pp. 152-176.

Ahn, P.D. and Wickramasinghe, D. (2021). Pushing the limits of accountability: big data analytics containing and controlling COVID-19 in South Korea. *Accounting, Auditing & Accountability Journal*, 34(6), pp. 1320–1331.

Andrew, J., Baker, M. and Guthrie, J. (2021) Accounting, inequality and COVID-19 in Australia. *Accounting, Auditing and Accountability Journal*, 34(4).

Ansell, C., Sørensen, E. and Torfing, J. (2020). The COVID-19 pandemic as a game changer for public administration and leadership? The need for robust governance responses to turbulent problems. *Public Management Review*, 23(7), pp. 949–960.

Adhikari, P., and Matilal, S. (2018). disaster Management and Corporate responsibility: An ethic of Care Approach. *Journal of the Institute of Chartered Accountants of Nepal,* 20(1), pp. 32-35.

Akrich, M. (1992). The de-scription of technical objects. Shaping technology/building society. *Studies in sociotechnical change*, pp. 205-224.

Baker, C.R. (2014). Breakdowns of accountability in the face of natural disasters: The case of Hurricane Katrina. *Critical Perspectives on Accounting*, 25(7), pp. 620–632.

Barad, K. (2007). *Meeting the universe halfway: Quantum physics and the entanglement of*

*matter and meaning.* Duke university Press.

BBC (2020). *Coronavirus: 2020 saw most deaths.* Available at: https://www.bbc.com/news/uk-52033813 (Accessed: 20 October 2021).

Bebbington, J., Brown, J., Frame, B. and Thomson, I. (2007) Theorizing engagement: the potential of a critical dialogic approach. *Accounting, Auditing & Accountability Journal*, 20(3), pp.356-381.

Berg, M. (1997). *Rationalizing Medical Work: Decision-Support Techniques and Medical Practices.* Cambridge: MIT Press.

Bakre, O., Lauwo, S. G., and McCartney, S. (2017). Western accounting reforms and accountability in wealth redistribution in patronage-based Nigerian society. *Accounting, Auditing & Accountability Journal,* 30(6), pp. 1288-1308.

Benston, G.J. (1982) Accounting and corporate accountability. *Accounting, Organizations and Society*, 7(2), pp.87-105.

Beck, U. (2014). *Risk society. Essential concepts of global environmental governance,* 178.

Bhaskar, R. (2013). *A realist theory of science*. Routledge.

Bracci, E., Humphrey, C., Moll, J., and Steccolini, I. (2015). Public sector accounting, accountability and austerity: more than balancing the books?. *Accounting, Auditing & Accountability Journal,* 28(6), pp. 878-908.

Boedker, C. and Chua, W.F. (2013). Accounting as an affective technology: A study of circulation, agency and entrancement. *Accounting, Organizations and Society*, 38(4), pp. 245–267.

Bourdieu, P. (1977). *Outline of a Theory of Practice.* Cambridge: Cambridge University

Press.

Boomsma, R. and O'Dwyer, B. (2014). The Nature of NGO Accountability: conceptions, motives, forms and mechanisms. In: Bebbington, J., Unerman, J. and O'Dwyer, B. (eds.) *Sustainability Accounting and Accountability*. New York, NY: Routledge.

Bourke, B. (2014). Positionality: Reflecting on the research process. *The qualitative report,* 19(33), pp. 1-9.

Bovens, M. (2007). Analysing and assessing accountability: A conceptual framework. *European Law Journal*, 13(4), pp. 447–468.

Bovens, M. (1998). *The quest for responsibility: Accountability and citizenship in complex organisations.* Cambridge university press.

Bovens, M., Schillemans, T., and Hart, P. T. (2008). Does public accountability work? An assessment tool. *Public administration,* 86(1), pp. 225-242.

Bowen, G.A. (1995). Document Analysis as a Qualitative Research Method. *Qualitative Research Journal*, 9(2), pp.27-40.

Boland Jr, R. J., and Schultze, U. (1996). From work to activity: technology and the narrative of progress. In Information Technology and Changes in Organizational Work: Proceedings of the IFIP WG8. 2 working conference on information technology and changes in organizational work, December 1995 (pp. 308-324). Boston, MA: Springer US.

Bushman, R. M., Piotroski, J. D., and Smith, A. J. (2004). What determines corporate transparency?. *Journal of accounting research,* 42(2), pp. 207-252.

Briers, M., and Chua, W. F. (2001). The role of actor-networks and boundary objects in management accounting change: a field study of an implementation of activity-based costing. *Accounting, organizations and society,* 26(3), pp. 237-269.

Barberis, P. (1998). The new public management and a new accountability. *Public administration*, 76(3), pp. 451-470.

Brinkerhoff, D. W. (2004). Accountability and health systems: toward conceptual clarity and policy relevance. *Health policy and planning,* 19(6), pp. 371-379.

Brinkmann, S. (2013). *Qualitative interviewing.* Oxford university press.

Butler, J., and Trouble, G. (1990). Feminism and the Subversion of Identity. *Gender trouble,* 3(1), pp. 3-17.

Butler, J. (1997). *The psychic life of power: Theories in subjection.* Stanford University Press.

Butler, J. (2005). *Giving an Account of Oneself*. New York: Fordham University Press.

Butler, J. (2015). Performative agency. *The limits of performativity,* pp. 10-24.

Bucher, T. (2018). *If... then: Algorithmic power and politics*. Oxford University Press.

Brammer, S., Branicki, L. and Linnenluecke, M.K. (2020). COVID-19, societalization, and the future of business in society. *Academy of Management Perspectives*, 34(4), pp. 493–507.

Braun, V. and Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), pp. 77–101.

Braun, K., and Könninger, S. (2018). From experiments to ecosystems? Reviewing public participation, scientific governance and the systemic turn. *Public Understanding of Science,* 27(6), pp. 674-689.

Bouckaert, G., Dooren, W. V., Verschuere, B., Voets, J., and Wayenberg, E. (2002). Trajectories for modernizing local governance: Revisiting the Flanders case. Public management review, 4(3), pp. 309-342.

Briers, M. and Chua, W.F. (2001). The role of actor-networks and boundary objects in management accounting change: a field study of an implementation of activity-based costing. *Accounting, Organizations and Society*, 26(3), pp. 237–269.

Broadbent, J., and Guthrie, J. (2008). Public sector to public services: 20 years of "contextual" accounting research. *Accounting, Auditing & Accountability Journal,* 21(2), pp. 129-169.

Brown, J. and Dillard, J. (2015) Opening accounting to critical scrutiny: towards dialogic accounting for policy analysis and democracy. *Journal of Comparative Policy Analysis*, 17(3), pp.247-268.

Bryman, A. (2016). *Social research methods*. Oxford university press.

Blumer, H. (2017). What is wrong with social theory?. *Sociological methods,* pp. 84-96.

Carungu, J., Di Pietra, R., and Molinari, M. (2021). The impact of a humanitarian disaster on the working approach of accountants: a study of contingent effects. *Accounting, Auditing & Accountability Journal,* 34(6), pp. 1388-1403.

Caker, M. (2007) Customer focus - An accountability dilemma. *European Accounting Review*, 16(1), pp.143-171.

Callon, M. (1986). The sociology of an actor-network: The case of the electric vehicle. In *Mapping the dynamics of science and technology: Sociology of science in the real world*. London: Palgrave Macmillan, pp. 19–34.

Callon, M. (2007). What does it mean to say that economics is performative. *Do economists make markets,* pp. 311-357.

Callon, M. (2009). Elaborating the notion of performativity. *Le libellio d'AEGIS*, 5(1), pp. 18–29.

Chen, Q. (2024). Building a panopticon through nodal governance: Mass surveillance and plural policing in China's COVID-19 lockdown. *International Journal for Crime, Justice and Social Democracy*, 13(2), pp. 1–19.

Cadbury Report (1992). *Report of the Committee on the Financial Aspects of Corporate Governance*. London: Gee Publishing

Coates IV, J. C. (2007). The goals and promise of the Sarbanes–Oxley Act. *Journal of economic perspectives,* 21(1), pp. 91-116.

Christ, K.L. and Burritt, R.L. (2021) Accounting for modern slavery risk in the time of COVID-19: challenges and opportunities. *Accounting, Auditing and Accountability Journal*, 34(4).

Coppola, D. (2006). *Introduction to international disaster management.* Elsevier.

Collier, P.M. (2005) Governance and the quasi-public organisation: a case study of social housing. *Critical perspectives on Accounting*, 16, pp.929-949.

Cooper, S.M. and Owen, D.L. (2007) Corporate social reporting and stakeholder accountability: The missing link. *Accounting, Organizations and Society*, 32(7-8), pp.649-667.

Chinese Center for Disease Control and Prevention (2020) *Notification of Wuhan Municipal Health Commission on Unexplained Viral Pneumonia*. Available at: https://www.chinacdc.cn/jkyj/crb2/yl/xxgzbdgr/yqdt/202409/t20240906_297085.html

(Accessed: 26 May 2022).

China Digital Times (2021). *Health code glitches cause chaos amid pandemic.* Available at: https://chinadigitaltimes.net (Accessed: 15 July 2023).

CIPFA (2001). *Corporate Governance in Local Government: A Practical Guide.* London: Chartered Institute of Public Finance and Accountancy.

Chia, R. (1999). A 'rhizomic'model of organisational change and transformation: Perspective from a metaphysics of change. *British journal of management,* 10(3), pp. 209-227.

Chua, W. F. (1995). Experts, networks and inscriptions in the fabrication of accounting images: a story of the representation of three public hospitals. *Accounting, organizations and Society,* 20(2-3), pp. 111-145.

Choy, H.,and Choy, H. Y. (2024). Laughter in the Time of Coronavirus: Epidemic Humor and Satire in Chinese Women's Digital Diaries. *Global Storytelling: Journal of Digital and Moving Images*, 3(2).

Czarniawska, B. (2008). Organising: how to study it and how to write about it. *Qualitative Research in Organizations and Management: An International Journal,* 3(1), pp. 4-20.

Elder-Vass, D. (2015). Disassembling actor-network theory. *Philosophy of the Social Sciences*, 45(1), pp. 100-121.

Dechow, N., and Mouritsen, J. (2005). Enterprise resource planning systems, management control and the quest for integration. *Accounting, organizations and society,* 30(7-8), pp. 691-733.

De Certeau, M. (1984). *The Practice of Everyday Life.* translated by S Rendall. Berkeley, CA: University of California.

Denzin, N. K. (2018). *The qualitative manifesto: A call to arms.* Routledge.

DiMaggio, P. J., and Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organisational fields. American sociological review, 48(2), pp. 147-160.

Dubnick, M. (2005). Accountability and the promise of performance: In search of the mechanisms. *Public Performance & Management Review,* 28(3), pp. 376-417.

Dubnick, M. J., and Frederickson, H. G. (Eds.). (2015). Accountable governance: Problems and promises. ME Sharpe.

Dunleavy, P. (2006). *Digital era governance: IT corporations, the state, and e-government.* Oxford University Press.

Ebrahim, A. (2003a). Accountability in practice: Mechanisms for NGOs. *World development*, 31(5), pp.813-829.

Ebrahim, A. (2003b). Making sense of accountability: Conceptual perspectives for northern and southern nonprofits. *Nonprofit Management and Leadership*, 14(2), pp.191-212.

Eller, W. S., Gerber, B. J., and Robinson, S. E. (2018). Nonprofit organisations and community disaster recovery: Assessing the value and impact of intersector collaboration. *Natural Hazards Review*, 19(1), pp. 05017007.

Ezzamel, M. (1994). Organisational change and accounting: understanding the budgeting system in its organisational context. *Organization studies,* 15(2), pp. 213-240.

Everett, J. and Friesen, C. (2010). Humanitarian accountability and performance in the Théâtre de l'Absurde. *Critical Perspectives on Accounting*, 21(6), pp. 468–485.

Finau, G., and Scobie, M. (2022). Old ways and new means: Indigenous accountings during and beyond the pandemic. *Accounting, Auditing & Accountability Journal,* 35(1), pp. 74-84.

Fairclough, N. (1992). *Discourse and social change.* Polity,.

Foucault, M. (1991). Governmentality. In G. Burchell, C. Gordon and P. Miller (Eds.), *The Foucault effect: Studies in governmentality*. Chicago: University of Chicago Press, pp. 87–104.

Foucault, M. (2013). *Archaeology of knowledge.* routledge.

Fleetwood, S. (2005). Ontology in organisation and management studies: A critical realist perspective. *Organization*, 12(2), pp. 197-222.

French, P. A. (1984). *Collective and corporate responsibility.* Columbia University Press.

FEMA, D. (2010). *Developing and maintaining emergency operations plans.*

Geertz, C. (1973). Thick description: Toward an interpretive theory of culture. In *The interpretation of cultures: Selected essays*. New York: Basic Books, pp. 3–30.

Gad, C., Jensen, C. B., and Winthereik, B. R. (2015). Practical ontology: Worlds in STS and anthropology. *NatureCulture,* 3, pp. 67-86.

Gevaert, C.M., Carman, M., Rosman, B., Georgiadou, Y. and Soden, R. (2021) Fairness and accountability of AI in disaster risk management: Opportunities and challenges. *Patterns*, 2(11), 100363.

Gerber, B. J. (2007). Disaster management in the United States: Examining key political and policy challenges. *Policy Studies Journal,* 35(2), pp. 227-238.

Goddard, A. (2005). Accounting and NPM in UK local government–contributions towards governance and accountability. *Financial Accountability & Management,* 21(2), pp. 191-218.

George, A. L., and Bennett, A. (2005). *Case studies and theory development in the social sciences*. MIT Press.

Guillemin, M., and Gillam, L. (2004). Ethics, reflexivity, and "ethically important moments" in research. *Qualitative inquiry,* 10(2), pp. 261-280.

Global Preparedness Monitoring Board (GPMB) (2019) *A World at Risk: Annual Report on Global Preparedness for Health Emergencies*. Geneva: World Health Organization.

Gostin, L.O. and Wiley, L.F. (2020). Governmental public health powers during the COVID-19 pandemic: Stay-at-home orders, business closures, and travel restrictions. *Journal of the American Medical Association*, 323(21), pp. 2137–2138.

Gray, R., Owen, D. and Adams, C. (1996) *Accounting & accountability: changes and challenges in corporate social and environmental reporting*. Prentice Hall.

Greer, S.L., King, E.J., da Fonseca, E.M. and Peralta-Santos, A. (2020). The comparative politics of COVID-19: The need to understand government responses. *Global Public Health*, 15(9), pp. 1413–1416.

Gstrein, O.J., Kochenov, D. and Zwitter, A. (2021). Digital identity and distributed ledger technology: Paving the way to a neo-feudal brave new world? *Frontiers in Blockchain*, 4, p. 666883.

Giroux, G., and McLelland, A. J. (2003). Governance structures and accounting at large municipalities. *Journal of Accounting and Public Policy*, 22(3), pp. 203-230.

Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration.* Univ of California Press.

Goodin, R. E. (1986). Responsibilities. *The Philosophical Quarterly* (1950-), 36(142), pp. 50-56.

Geraldine, L. T. (2000). *Danger in the Field: Risk and Ethics in Social Research.* Taylor & Francis.

Guardian (2020). *How Excel may have caused loss of 16,000 test results in England.* Available at: https://www.theguardian.com/politics/2020/oct/05/how-excel-may-have-caused-loss-of-16000-covid-tests-in-england (Accessed: 20 May 2022).

Hale, T., Angrist, N., Goldszmidt, R., Kira, B., Petherick, A., Phillips, T., Webster, S., Cameron-Blake, E., Hallas, L., Majumdar, S. and Tatlow, H. (2021). A global panel database of pandemic policies (Oxford COVID-19 Government Response Tracker). *Nature Human Behaviour*, 5(4), pp. 529–538.

Hodges, R. (2012). Joined-up government and the challenges to accounting and accountability researchers. *Financial Accountability & Management,* 28(1), pp. 26-51.

Hall, C. M., Malinen, S., Vosslamber, R., and Wordsworth, R. (Eds.). (2016). *Business and post-disaster management: Business, organisational and consumer resilience and the Christchurch earthquakes.* Routledge.

Hart, H. L. A. (2008). *Punishment and responsibility: Essays in the philosophy of law.* Oxford University Press.

He, A.J., Shi, Y. and Liu, H. (2020). Crisis governance, Chinese style: Distinctive features of China's response to the Covid-19 pandemic. *Policy Design and Practice*, 3(3), pp. 242–258.

Hesse-Biber, S.N. (2017) *The practice of qualitative research: Engaging students in the research process*. 3rd edn. Thousand Oaks, California: SAGE Publications, Inc.

Heeks, R., and Stanforth, C. (2007). Understanding e-Government project trajectories from an actor-network perspective. *European Journal of Information Systems,* 16(2), pp. 165-177.

Habich-Sobiegalla, S., and Plümmer, F. (2023). Topologies of power in China′s grid-style social management during the COVID-19 pandemic. *Security Dialogue,* 54(2), pp. 192-210.

Heimer, M. (Ed.). (2006). *Doing fieldwork in China (Vol. 1).* University of Hawaii Press.

Hine, C. (2020). *Ethnography for the internet: Embedded, embodied and everyday.* Routledge.

Hampel Report (1998). *Committee on Corporate Governance: Final Report.* London: Gee Publishing.

Hirst, P. (2000). *Democracy and Governance in J Pierre (ed.)* Debating Governance. Authority, Steering and Democracy.

Hudson, J. M., and Bruckman, A. (2004). "Go away": Participant objections to being studied and the ethics of chatroom research. *The information society,* 20(2), pp. 127-139.

Hochschild, A. R. (2002). The sociology of emotion as a way of seeing. *Emotions in social life,* pp. 31-44.

Hood, C. (1983). Using bureaucracy sparingly. *Public Administration,* 61(2), pp. 197-208.

Hupe, P., and Hill, M. (2007). Street-Level bureaucracy and public accountability. *Public administration*, 85(2), pp. 279-299.

IFAC (2001). *Governance in the Public Sector: A Governing Body Perspective*. New York: International Federation of Accountants.

Introna, L. D. (2011). The enframing of code: Agency, originality and the plagiarist. *Theory, Culture & Society,* 28(6), pp. 113-141.

Introna, L. D. (2016). Algorithms, governance, and governmentality: On governing academic writing. *Science, Technology, & Human Values,* 41(1), pp. 17-49.

Israel, M., and Hay, I. (2006). *Research ethics for social scientists.* Sage.

Janke, R., Mahlendorf, M.D. and Weber, J. (2014) An exploratory study of the reciprocal relationship between interactive use of management control systems and perception of negative external crisis effects. *Management Accounting Research*, 25(4), pp.251-270.

Jayasinghe, K. and Soobaroyen, T. (2009) Religious 'spirit' and people's perceptions of accountability in Hindu and Buddhist religious organisations. *Accounting, Auditing and Accountability Journal*, 22, pp.997-1028.

Jayasinghe, K., Kenney, C. M., Prasanna, R., and Velasquez, J. (2020). Enacting "accountability in collaborative governance": Lessons in emergency management and earthquake recovery from the 2010–2011 Canterbury Earthquakes. *Journal of Public Budgeting, Accounting & Financial Management*, *32*(3), pp. 439-459.

Jacobs, K. (2012). Making sense of social practice: theoretical pluralism in public sector accounting research. *Financial Accountability and Management,* 28(1), pp. 1-25.

Joannides, V. (2012) Accounterability and the problematics of accountability. *Critical Perspectives on Accounting*, 23(3), pp.244-257.

Jollands, S., Akroyd, C. and Sawabe, N. (2018) Management controls and pressure groups: the mediation of overflows. *Accounting, Auditing & Accountability Journal*.

Jones, G.W. (1992) *The search for local accountability*. Harlow: Longman.

Jones, T. C., and Dugdale, D. (2002). The ABC bandwagon and the juggernaut of modernity. *Accounting, organizations and society,* 27(1-2), pp. 121-163.

Jessop, B. (1990). *State theory: Putting the capitalist state in its place.*

Justesen, L. and Mouritsen, J. (2011). Effects of actor-network theory in accounting research. *Accounting, Auditing & Accountability Journal*, 24(2), pp. 161–193.

Jesover, F., and Kirkpatrick, G. (2005). The revised OECD principles of corporate governance and their relevance to non-OECD countries. *Corporate Governance: An International Review*, 13(2), pp. 127-136.

Kamuf, P. (2007) Accountability. *Textual Practice*, 21(2), pp.251-266.

Kooiman, J. (2002) *Governing as Governance.* London: Sage Publications.

Koppell, J.G.S. (2005). Pathologies of accountability: ICANN and the challenge of "multiple accountabilities disorder', *Public Administration Review,* 65(1), pp. 94-108.

Kornberger, M., and Carter, C. (2010). Manufacturing competition: how accounting practices shape strategy making in cities. *Accounting, Auditing & Accountability Journal,* 23(3), pp. 325-349.

Koppell, J. G. (2005). Pathologies of accountability: ICANN and the challenge of “multiple accountabilities disorder”. *Public administration review,* 65(1), pp. 94-108.

Kemal, M. (2016). *Empirical studies on changes in oil governance.* Colorado School of Mines.

Kaufmann, D., Kraay, A., and Mastruzzi, M. (2011). The worldwide governance indicators: Methodology and analytical issues1. *Hague journal on the rule of law,* 3(2), pp. 220-246.

Kilby, P. (2006). Accountability for empowerment: dilemmas facing non-governmental organisations, *World Development,* 34(6), pp. 951-963.

Kober, R., and Thambar, P. J. (2022). Paradoxical tensions of the COVID-19 pandemic: a paradox theory perspective on the role of management control systems in helping organisations survive crises. *Accounting, Auditing & Accountability Journal,* 35(1), pp. 108-119.

Kvale, S., and Brinkmann, S. (2009). *Interviews: Learning the craft of qualitative research interviewing.* sage.

Landi, S., Costantini, A., Fasan, M. and Bonazzi, M. (2022). Public engagement and dialogic accounting through social media during COVID-19 crisis: a missed opportunity? *Accounting, Auditing & Accountability Journal*, 35(1), pp. 35–47.

Larrinaga, C. and Garcia-Torea, N. (2021) An ecological critique of accounting: The circular economy and COVID-19. *Critical Perspectives on Accounting*, 102320.

Latour, B. (1987). *Science in action: How to follow scientists and engineers through society*. Cambridge, MA: Harvard University Press.

Latour, B. (1992). Where are the missing masses? The sociology of a few mundane artefacts. In W.E. Bijker and J. Law (Eds.), *Shaping technology/building society: Studies in sociotechnical change*. Cambridge, MA: MIT Press, pp. 225–258.

Latour, B. (1993). *The pasteurization of France*. Cambridge, MA: Harvard University Press.

Latour, B. (1999). On recalling ANT. *The Sociological Review*, 47(S1), pp. 15–25.

Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*. Oxford: Oxford University Press.

Law, J. (1992). Notes on the theory of the actor-network: Ordering, strategy, and heterogeneity. *Systems practice,* 5(4), pp. 379-393.

Law, J. (1994). *Organizing modernity.* Oxford: Blackwell.

Law, J. (2004). *After method: Mess in social science research*. London: Routledge.

Law, J. (2009). Actor network theory and material semiotics. In B.S. Turner (Ed.), *The new Blackwell companion to social theory*. Chichester: Wiley-Blackwell, pp. 141–158.

Levi, M. (1997). *Consent, dissent, and patriotism.* Cambridge University Press.

Linnenluecke, M. K. (2017). Resilience in business and management research: A review of influential publications and a research agenda. *International journal of management reviews,* 19(1), pp. 4-30.

Linde, A., Linderoth, H., and Raisanen, C. (2003). An actor network theory perspective on IT-projects: a battle of wills. *Action in language, organisations and information systems 2003.*

Lipsky, M. (2010). *Street-level bureaucracy: Dilemmas of the individual in public service.* Russell sage foundation.

Lehman, G. (2007) The accountability of NGOs in civil society and its public spheres. *Critical Perspectives on Accounting*, 18(6), pp.645-669.

Leoni, G., Lai, A., Stacchezzini, R., Steccolini, I., Brammer, S., Linnenluecke, M. and Demirag, I. (2021). Accounting, management and accountability in times of crisis: lessons from the COVID-19 pandemic. *Accounting, Auditing & Accountability Journal*, 34(6), pp. 1305–1319.

Lerner, J.S. and Tetlock, P.E. (1999). Accounting for the effects of accountability, *Psychological Bulletin,* 125(2), pp. 255-275.

Lowe, A. (2001). Accounting information systems as knowledge-objects: some effects of objectualization. *Management Accounting Research,* 12(1), pp. 75-100.

MacKenzie, D. (2008). *An engine, not a camera: How financial models shape markets.* Mit Press.

Meuleman, L. (2008). *Public management and the metagovernance of hierarchies, networks and markets: The feasibility of designing and managing governance style combinations.* Heidelberg: Physica-Verlag HD.

McKernan, J.F. and McPhail, K. (2012). Accountability and accounterability. *Critical Perspectives on Accounting*, 23(3), pp. 177–182.

Merchant, K.A. and Otley, D.T. (2006) A review of the literature on control and accountability. *Handbooks of management accounting research*, 2, pp.785-802.

Messner, M. (2009) The limits of accountability. *Accounting, Organizations and Society*, 34(8), pp.918-938.

Mattli, W., and Büthe, T. (2005). Accountability in accounting? The politics of private rule-making in the public interest. *Governance,* 18(3), pp. 399-429.

Mitchell, F., Nørreklit, H., Nørreklit, L., Cinquini, L., Koeppe, F., Magnacca, F., ... and Liboriussen, J. M. (2021). Evaluating performance management of COVID-19 reality in three European countries: a pragmatic constructivist study. *Accounting, Auditing & Accountability Journal*, *34*(6), pp.1345-1361.

Mitchell, J.C. (1984). Typicality and the case study. In R.F. Ellen (Ed.), *Ethnographic research: A guide to general conduct*. London: Academic Press, pp. 238–241.

Mitchell, T. (1991). The limits of the state: Beyond statist approaches and their critics. *American political science review,* 85(1), pp. 77-96.

Miller, P. (1991). Accounting innovation beyond the enterprise: problematising investment decisions and programming economic growth in the UK in the 1960s. *Accounting, Organizations and Society,* 16(8), pp. 733-762.

Michael, M. (2016). *Actor-network theory: Trials, trails and translations.*

Mol, A. (1999). Ontological politics. A word and some questions. *The sociological review,* 47(1_suppl), pp. 74-89.

Mol, A. (2002). *The body multiple: Ontology in medical practice*. Durham, NC: Duke University Press.

Mol, A. (2008). *The logic of care: Health and the problem of patient choice.* Routledge.

Moran, M. (2002). Review article: Understanding the regulatory state. *British Journal of Political Science*, 32(2), pp. 391–413.

Modell, S. (2009). In defence of triangulation: A critical realist approach to mixed methods research in management accounting. *Management accounting research,* 20(3), pp. 208-221.

Mulgan, R. (2000). Accountability: An ever-expanding concept? *Public Administration*, 78(3), pp. 555–573.

Mulgan, R. (2014). Accountability deficits, in Bovens, M., Goodin, R.E. and Schillemans, T. (eds.) *The Oxford Handbook of Public Accountability.* Oxford: Oxford University Press, pp. 545-558.

Müller, M. (2015). Assemblages and actor-networks: Rethinking socio-material power, politics and space. *Geography compass,* 9(1), pp. 27-41.

Moscariello, N., and Pizzo, M. (2022). Practical expedients and theoretical flaws: the IASB's legitimacy strategy during the COVID-19 pandemic. *Accounting, Auditing & Accountability Journal,* 35(1), pp. 158-168.

Munro, R., and Mouritsen, J. (1996). *Accountability: power, ethos, and the technologies of managing.*

Malsch, B. (2013). Politicizing the expertise of the accounting industry in the realm of corporate social responsibility. *Accounting, Organizations and Society*, 38(2), pp. 149-168.

Najam, A. (1996) NGO accountability: A conceptual framework. *Development policy review*, 14(4), pp.339-354.

National Health Commission of the People's Republic of China (2021). *Optimized Guidelines for COVID-19 Prevention and Control.* Available at: https://www.nhc.gov.cn/wjw/c100175/202108/47c8a8f16c5242bcac8749497517e9ef.shtml (Accessed: 26 July 2023).

National Health Commission of the People's Republic of China (2022). *Notice on Further Optimizing COVID-19 Response Measures.* Available at: https://www.nhc.gov.cn/xcs/zhengcwj/202212/15457b5897ba42c991e3ee3b1f1f4bed.shtml

(Accessed: 28 July 2023)

National Health Commission of the People's Republic of China (2022). *Protocol for prevention and control of COVID-19 (9th edition).* Available at: https://www.nhc.gov.cn/jkj/c100063/202206/43d498a7de214a5fac8c24b58cf44902.shtml (Accessed: 30 July 2023).

Nowicka, M. and Ryan, L. (2015). Beyond insiders and outsiders in migration research: Rejecting a priori commonalities. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research,* 16(2), Art. 18.

Noy, C. (2008). Sampling knowledge: The hermeneutics of snowball sampling in qualitative research. *International Journal of Social Research Methodology*, 11(4), pp. 327–344.

Neu, D., Everett, J., Rahaman, A. S., and Martinez, D. (2013). Accounting and networks of corruption. *Accounting, Organizations and Society,* 38(6-7), pp. 505-524.

Osborne, S.P. (2010). *The new public governance? Emerging perspectives on the theory and practice of public governance*. London: Routledge.

Osborne, S.P. and Strokosch, K. (2013). It takes two to tango? Understanding the co-production of public services by integrating the services management and public administration perspectives. *British Journal of Management*, 24(S1), pp. S31–S47.

Okolie, J. U. (2014). Corporate governance and audit committee in Nigeria. *Journal of Policy and Development Studies,* 289(1849), pp. 1-8.

O'Dwyer, B., and Unerman, J. (2007). From functional to social accountability: Transforming the accountability relationship between funders and non-governmental development organisations. *Accounting, Auditing & Accountability Journal,* 20(3), pp. 446-471.

Orlikowski, W. J. (2007). Sociomaterial practices: Exploring technology at work. *Organization studies*, 28(9), pp. 1435-1448.

Orlikowski, W. J., and Scott, S. V. (2008). 10 sociomateriality: challenging the separation of technology, work and organisation. *Academy of Management annals,* 2(1), pp. 433-474.

Orlikowski, W. J., and Scott, S. V. (2014). What happens when evaluation goes online? Exploring apparatuses of valuation in the travel sector. *Organization Science*, 25(3), pp. 868-891.

OECD (1999). *OECD Principles of Corporate Governance.* Paris: OECD Publishing.

OECD (2004). *OECD Principles of Corporate Governance.* Paris: OECD Publishing.

Parker, L. and Gould, G. (1999) Changing public sector accountability: Critiquing new directions. *Accounting Forum*, 22(2), pp.109-135.

Patton, M. Q. (2022). Impact-driven qualitative research and evaluation. *The SAGE handbook of qualitative research design*, 2, pp. 1165-1180.

Parker, L. D., and Northcott, D. (2016). Qualitative generalising in accounting research: concepts and strategies. *Accounting, Auditing & Accountability Journal*, 29(6), pp. 1100-1131.

Petersen, E., Koopmans, M., Go, U., Hamer, D.H., Petrosillo, N., Castelli, F., Storgaard, M., Al Khalili, S. and Simonsen, L. (2020). Comparing SARS-CoV-2 with SARS-CoV and influenza pandemics. *The Lancet Infectious Diseases*, 20(9), pp. e238–e244.

Parisi, C., and Bekier, J. (2022). Assessing and managing the impact of COVID-19: a study of six European cities participating in a circular economy project. *Accounting, Auditing & Accountability Journal,* 35(1), pp. 97-107.

Pasquale, F. (2015). *The black box society: The secret algorithms that control money and information*. Harvard University Press.

Perry, M. (2007). Natural disaster management planning: A study of logistics managers responding to the tsunami. *International Journal of Physical Distribution & Logistics Management,* 37(5), pp. 409-433.

Polidano, C. (1998). Why bureaucrats can't always do what Ministers want: multiple accountabilities in Westminster democracies. *Public Policy and Administration,* 13(1), pp. 35-50.

Pollitt, C., and Hupe, P. (2011). Talking about government: The role of magic concepts. *Public management review,* 13(5), pp. 641-658.

Power, M. (1997). *The audit society: Rituals of verification.* OUP Oxford.

Preston, A. M., Chua, W. F., and Neu, D. (1997). The diagnosis-related group-prospective payment system and the problem of the government of rationing health care to the elderly. *Accounting, Organizations and Society,* 22(2), pp. 147-164.

Preston, A. M., Cooper, D. J., and Coombs, R. W. (1992). Fabricating budgets: a study of the production of management budgeting in the National Health Service. *Accounting, Organizations and Society,* 17(6), pp. 561-593.

Pinch, T. J., and Bijker, W. E. (1984). The social construction of facts and artefacts: Or how the sociology of science and the sociology of technology might benefit each other. *Social studies of science,* 14(3), pp. 399-441.

Qiu, W., Rutherford, S., Mao, A. and Chu, C. (2017) The pandemic and its impacts. *Health, culture and society*, 9, pp.1-11.

Qin, X., and Owen, C. (2021). Social forces and street-level governance in Shanghai: From compliance to participation in recycling regulations. *The China Quarterly,* 248(1), pp. 1081-1102.

Quattrone, P. and Hopper, T. (2005). A 'time-space odyssey': Management control systems in two multinational organisations. *Accounting, Organizations and Society*, 30(7-8), pp. 735–764.

Quarantelli, E. L. (1985). WHAT IS DISASTER? THE NEED FOR CLARIFICATION IN DEFINITION. *Disasters and mental health: Selected contemporary perspectives,* 41.

Qu, S. Q., and Cooper, D. J. (2011). The role of inscriptions in producing a balanced scorecard. *Accounting, organizations and society*, 36(6), pp. 344-362.

Rabeharisoa, V., and Callon, M. (2002). The involvement of patients' associations in research. *International Social Science Journal,* 54(171).

Read, B. L. (2000). Revitalizing the state's urban "nerve tips". *The China Quarterly,* 163, pp. 806-820.

Rhodes, R. A. W. (1996). The new governance: governing without government. *Political studies*, 44(4), pp. 652-667.

Rhodes, R.A.W. (1997) Understanding Governance: Policy Networks. *Governance, Reflexivity and Accountability.* Buckingham: Open University Press.

Rhodes, R.A.W. (2007). Understanding governance: Ten years on. *Organization Studies*, 28(8), pp. 1243–1264.

Rikhardsson, P., Rohde, C., Christensen, L., and Batt, C. E. (2021). Management controls and crisis: evidence from the banking sector. *Accounting, Auditing & Accountability Journal*, *34*(4), pp. 757-785.

Roberts, J. (1991). The possibilities of accountability. *Accounting, Organizations and Society*, 16(4), pp. 355–368.

Roberts, J. (1996) From discipline to dialogue: Individualising and socialising forms of accountability. In: Munro, R. and Mouritsen, J. (eds.) *Accountability. Power, ethos and the technologies of managing*. U.K.: International Thomson Business Press, pp.40-61.

Roberts, J. (2001a). Corporate governance and the ethics of Narcissus. *Business Ethics Quarterly*, 11(1), pp.109-127.

Roberts, J. (2001b). Trust and control in Anglo-American systems of corporate governance: The individualising and socialising effects of processes of accountability. *Human Relations*, 54(2), pp.1547-1572.

Roberts, J. (2003). The manufacture of corporate social responsibility: constructing corporate sensibility. *Organisation*, 10(2), pp.249-265.

Roberts, J. (2009). No one is perfect: The limits of transparency and an ethic for intelligent accountability. *Accounting, Organizations and Society*, 34, pp.957-970.

Roberts, J. and Jones, M. (2009). Accounting for self-interest in the credit crisis. *Accounting, Organizations and Society*, 34, pp.856-867.

Roberts, J. and Scapens, R. (1985). Accounting systems and systems of accountability -Understanding accounting practices in their organisational contexts. *Accounting, Organizations and Society*, 10(4), pp.443-456.

Robson, K. (1991). On the arenas of accounting change: the process of translation. *Accounting, Organizations and Society*, 16(5-6), pp. 547-570.

Robson, K. (1992). Accounting numbers as "inscription": Action at a distance and the

development of accounting. *Accounting, Organizations and Society*, 17(7), pp. 685–708.

Rhodes, R. A. (2000). Governance and public administration. *Debating governance,* 54, p. 90.

Robson, K. and Bottausci, C. (2018). The sociology of translation and accounting inscriptions: Reflections on Latour and accounting research. *Critical Perspectives on Accounting*, 54, pp. 60–75.

Romzek, B. S., LeRoux, K., and Blackmar, J. M. (2012). A preliminary theory of informal accountability among network organisational actors. *Public administration review,* 72(3), pp. 442-453.

Romzek, B. S. and Dubnick, M. J. (2018). Accountability in the public sector: Lessons from the Challenger tragedy. In *Democracy, bureaucracy, and the study of administration*. Routledge, pp. 182–204.

Romzek, B. S. (2000). Dynamics of public sector accountability in an era of reform. *International review of administrative sciences,* 66(1), pp. 21-44.

Rotberg, R. I. (2007, February). The failure and collapse of nation states. *In Staatszerfall und Governance* (pp. 57-97). Nomos Verlagsgesellschaft mbH & Co. KG.

Ruppert, E. (2012). The governmental topologies of database devices. *Theory, culture & society*, 29(4-5), pp. 116-136.

Safari, M., Bicudo de Castro, V., and Steccolini, I. (2020). The interplay between home and host logics of accountability in multinational corporations (MNCs): the case of the Fundão dam disaster. *Accounting, Auditing & Accountability Journal*, *33*(8), pp.1761-1789.

Sarker, S., Sarker, S., and Sidorova, A. (2006). Understanding business process change failure: An actor-network perspective. *Journal of management information systems,* 23(1),

pp. 51-86.

Sayes, E. (2014). Actor–Network Theory and methodology: Just what does it mean to say that nonhumans have agency?. *Social studies of science*, 44(1), pp. 134-149.

Sloan, R. G. (2001). Financial accounting and corporate governance: a discussion. *Journal of accounting and economics*, 32(1-3), pp. 335-347.

Su, Z., McDonnell, D., Bentley, B. L., Cheshmehzangi, A., Ahmad, J., Šegalo, S., ... and Xiang, Y. T. (2024). Pandemic volunteers: the imperative for regulations and training. *Disaster Medicine and Public Health Preparedness*, 18, e36.

Sargiacomo, M. (2015) Earthquakes, exceptional government and extraordinary accounting. *Accounting, Organizations and Society*, 42, pp.67-89.

Sargiacomo, M., Ianni, L. and Everett, J. (2014). Accounting for suffering: Calculative practices in the field of disaster relief. *Critical Perspectives on Accounting*, 25(7), pp. 652–669.

Sciulli, M. (2018). Weathering the storm: accountability implications for flood relief and recovery from a local government perspective. *Financial Accountability and Management*, 34, pp.30-44.

Schillemans, T. (2008). Accountability in the shadow of hierarchy: the horizontal accountability of agencies, *Public Organization Review,* 8(2), pp. 175-194.

Scott, J.C. (1998). *Seeing like a state: How certain schemes to improve the human condition have failed*. New Haven, CT: Yale University Press.

Scott, S.V. and Orlikowski, W.J. (2012). Reconfiguring relations of accountability: The consequences of social media for the travel sector, *Accounting, Organizations and Society,* 37(1), pp. 26-40.

Scott, S. V., and Orlikowski, W. J. (2014). Entanglements in practice. *MIS quarterly,* 38(3), pp. 873-894.

Shaw, R., Kim, Y.K. and Hua, J. (2020). Governance, technology and citizen behaviour in pandemic: Lessons from COVID-19 in East Asia. *Progress in Disaster Science*, 6, p. 100090.

Shove, E., Pantzar, M. and Watson, M. (2012). *The dynamics of social practice: Everyday life and how it changes*. London: Sage.

Sinclair, A. (1995). The chameleon of accountability: Forms and discourses. *Accounting, Organizations and Society*, 20(2-3), pp. 219–237.

Sinclair, J. (2019). *If… then: Algorithmic power and politics.*

Skærbæk, P., and Tryggestad, K. (2010). The role of accounting devices in performing corporate strategy. *Accounting, organizations and society,* 35(1), pp. 108-124.

Sørensen, E. (2006). Metagovernance: The changing role of politicians in processes of democratic governance. *The American review of public administration,* 36(1), pp. 98-114.

Sørensen, E. (2012). Measuring the accountability of collaborative innovation. *The Innovation Journal: The Public Sector Innovation Journal*, 17(1), pp.1-18.

Sørensen, E. and Torfing, J. (2007). Introduction governance network research: Towards a second generation. In *Theories of democratic network governance*. London: Palgrave Macmillan UK, pp. 1–21.

Spicer, A., Alvesson, M., and Kärreman, D. (2009). Critical performativity: The unfinished business of critical management studies. *Human relations,* 62(4), pp.537-560.

Star, S. (2010). This is not a boundary object: Reflections on the origin of a concept. *Science, technology, & human values,* 35(5), pp. 601-617.

Strawson, P. F. (2008). *Freedom and resentment and other essays.* Routledge.

Star, S. L., and Griesemer, J. R. (1989). Institutional ecology,translations' and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39. *Social studies of science,* 19(3), pp. 387-420.

State Council Information Office of the People's Republic of China (2020). *Fighting COVID-19: China in action.* Beijing: State Council Information Office. Available at: http://www.scio.gov.cn/zfbps/ndhf/2020n/202207/t20220704_130649.html

State Council Information Office of the People's Republic of China (2022). *Notice on Further Optimizing COVID-19 Response Measures.* Available at: https://www.gov.cn/xinwen/2022-11/11/content_5726122.htm

Stake, R. (1995). *Case study research.* Cham: Springer.

Smith, J. A. (2018). *Qualitative psychology: A practical guide to research methods.*

Sharon, T. (2021). Blind-sided by privacy? Digital contact tracing, the Apple/Google API and big tech's newfound role as global health policy makers. *Ethics and information technology,* 23(1), pp. 45-57.

Spence, C. (2009). Social accounting's emancipatory potential: A Gramscian critique. *Critical Perspectives on Accounting,* 20(2), pp. 205-227.

Spence, L. J., and Rinaldi, L. (2014). Governmentality in accounting and accountability: A case study of embedding sustainability in a supply chain. *Accounting, organizations and society*, 39(6), pp. 433-452.

Suchman, L. A. (2007). *Human-machine reconfigurations: Plans and situated actions.* Cambridge university press.

Taylor, D., Tharapos, M. and Sidaway, S. (2014) Downward accountability for a natural disaster recovery effort: Evidence and issues from Australia's Black Saturday. *Critical Perspectives on Accounting*, 25(7), pp.633-651.

Taylor, L. (2017). What is data justice? The case for connecting digital rights and freedoms globally. *Big Data & Society,* 4(2), pp. 2053951717736335.

Tatnall, A., and Burgess, S. (2004). Using actor-network theory to identify factors affecting the adoption of e-commerce in SMEs. *In E-business innovation and change management.* IGI Global Scientific Publishing. pp. 152-169.

The Lancet (2020). COVID-19: Too little, too late? *The Lancet*, 395(10226), p. 755.

Tomba, L. (2014). *The government next door: Neighborhood politics in urban China*. Ithaca, NY: Cornell University Press.

Tronto, J. (2020). *Moral boundaries: A political argument for an ethic of care.* Routledge.

Tilley, L., and Woodthorpe, K. (2011). Is it the end for anonymity as we know it? A critical examination of the ethical principle of anonymity in the context of 21st century demands on the qualitative researcher. *Qualitative research,* 11(2), pp. 197-212.

Turnbull Report (1999). *Internal Control: Guidance for Directors on the Combined Code.* London: Institute of Chartered Accountants in England and Wales.

Tregidga, H. and Laine, M. (2021) On crisis and emergency: Is it time to rethink long-term environmental accounting? *Critical Perspectives on Accounting*, 102311.

Tyler, T. R. (2006). *Why people obey the law.* Princeton university press.

Vamosi, T. (2005) Management accounting and accountability in a new reality of everyday life. *The British Accounting Review*, 37(4), pp.443-470.

Vaughan, D. (1999). The dark side of organisations: Mistake, misconduct, and disaster. *Annual review of sociology,* 25(1), pp. 271-305.

Velasquez, M. G. (1983). Why corporations are not morally responsible for anything they do. *Business & Professional Ethics Journal,* 2(3), pp. 1-18.

Venturini, T. (2010). Diving in magma: How to explore controversies with actor-network theory. *Public Understanding of Science*, 19(3), pp. 258–273.

Vanhommerig, I., and Karré, P. M. (2014). Public accountability in the Internet age: changing roles for governments and citizens. *International Review of Public Administ*ration, 19(2), pp. 206-217.

Van Der Walt, F., and Steyn, P. (2019). Workplace spirituality and the ethical behaviour of project managers. *SA Journal of Industrial Psychology,* 45(1), pp. 1-9.

Woods, N. and Narlikar, A. (2001). Governance and the limits of accountability: the WTO, the IMF, and the World Bank, *International Social Science Journal*, 53(170), pp. 569-583.

Willmott, H. (1996). Thinking accountability: accounting for the disciplined production of self. *Accountability: Power, ethos and the technologies of managing*, pp. 23-39.

Williams-Jones, B., and Graham, J. E. (2003). Actor-network theory: a tool to support ethical analysis of commercial genetic testing. *New genetics and society,* 22(3), pp. 271-296.

Walker, S.P. (2014) Drought, resettlement and accounting. *Critical Perspectives on Accounting*, 25(7), pp.604-619.

Watson, T. J. (2012). Making organisational ethnography. *Journal of Organizational Ethnography,* 1(1), pp. 15-22.

Woolgar, S. and Neyland, D. (2013). *Mundane Governance: Ontology and Accountability.* Oxford: Oxford University Press.

Weber, M. (1962) *Basic Concepts in Sociology*. New York: Philosophical Library.

Weber, M. (1978*) Economy and society: An outline of interpretive sociology*. Berkeley, CA: University of California Press

Whittle, A., and Spicer, A. (2008). Is actor network theory critique?. *Organization studies,* 29(4), pp. 611-629.

World Health Organization (WHO) (2023). *WHO coronavirus (COVID-19) dashboard.* Available at: https://covid19.who.int/ (Accessed: 15 July 2023).

World Bank (1992). *Governance and Development.* Washington, DC: World Bank

World Bank (1989). *Sub-Saharan Africa: From Crisis to Sustainable Growth.* Washington, DC: World Bank.

World Bank (2000). *Reforming Public Institutions and Strengthening Governance.* Washington, DC: World Bank.

Heath, S., Charles, V., Crow, G., and Wiles, R. (2007). Informed consent, gatekeepers and go-betweens: negotiating consent in child-and youth-orientated institutions. *British Educational Research Journal,* 33(3), pp. 403-417.

Yates, D. and Difrancesco, R. M. (2022). The view from the front line: shifting beneficiary

accountability and interrelatedness in the time of a global pandemic. *Accounting, Auditing & Accountability Journal*, 35(1), pp. 85–96.

Yin, R.K. (2018). *Case study research and applications: Design and methods*. 6th edn. Thousand Oaks, CA: Sage.

Yu, A. (2021). Accountability as mourning: Accounting for death in the time of COVID-19. *Accounting, Organizations and Society*, 90, p. 101198.

Yeung, K. (2019). 'Hypernudge': Big Data as a mode of regulation by design. *The social power of algorithms*. Routledge.

Young, I. M. (2011). *Responsibility for justice.* Oxford University Press.

Zeneli, A., Brandi, G., Di Pasquale, G., Orlandini, D., De Carolis, P., Bravi, F., ... and Iannone, P. (2021). Identifying ethical values for guiding triage decisions during the COVID-19 pandemic: an Italian ethical committee perspective using Delphi methodology. *BMJ open,* 11(5).

Zhai, Y. (2023). The politics of COVID-19: The political logic of China's zero-COVID policy. *Journal of Contemporary Asia*, 53(5), pp. 869–886.

Liu, Z. J. (2025). Digital Governance, Dataveillance, and Participatory Panopticon: Public Health Surveillance in China from 2020 to 2022. *Journal of Contemporary China*, pp. 1–17.

Zuboff, S. (2024). The age of surveillance capitalism: The fight for a human future at the new frontier of power. *Journal of Information Ethics*, 33(1), pp. 84-85.