
Themenheft 72: Mixed Methods im Spannungsfeld. Weiterentwicklung digitaler Forschungsmethoden zwischen KI, NLP, Big Data und transdisziplinärer Forschung.
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Grounded in Multiplicity

Why Grounded Theory is a Native Mixed Methods Framework

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Abstract

Grounded Theory (GT), as developed by Anselm Strauss and Barney Glaser in the mid-20th century, originated in a research tradition that refused rigid boundaries between qualitative and quantitative methods. This paper argues that Grounded Theory is not only compatible with mixed methods research, but was, in fact, originally conceived as a mixed methods approach. From its roots in the methodologically pluralistic University of Chicago, GT integrated observational, narrative, and statistical data in a recursive methodological loop. Central to this approach is Strauss's unique treatment of numbers – not as neutral facts, but as representations of social meaning. Using examples from early seminal studies (1950–1965), this paper shows how Strauss converted narratives into statistical patterns, then returned to interpret those numbers through rich contextual analysis. The resulting loop enabled the simultaneous exploration of what, where, why, and how social phenomena occur. The paper concludes by linking these classic GT practices with contemporary challenges: digital data integration, hybrid models, and transdisciplinary design. In an era shaped by AI, NLP, and participatory science, GT offers a robust and meaning-centred model for integrated knowledge production that bridges traditional empirical work with emerging digital methodologies.

Verankerung in Vielheit. Warum die Grounded Theory ein genuiner Mixed-Methods-Ansatz ist

Zusammenfassung

Die Grounded Theory (GT), entwickelt von Anselm Strauss und Barney Glaser in den 1960er-Jahren, entstand in einem methodologisch pluralistischen Umfeld, das keine strikte Trennung zwischen qualitativen und quantitativen Methoden kannte. Dieser Beitrag argumentiert, dass GT nicht nur mit Mixed Methods vereinbar ist, sondern ursprünglich als solcher

konzipiert wurde. Basierend auf ihrer Ausbildung an der University of Chicago integrierten Strauss und Glaser narrative, beobachtende und statistische Daten in einem rekursiven methodischen Zyklus. Im Zentrum dieser Methodik steht Strauss' innovative Auffassung von Zahlen – nicht als neutrale Fakten, sondern als Repräsentationen sozialer Bedeutungen. Anhand von frühen Studien (1950–1965) wird gezeigt, wie narrative Daten in skalierte Muster überführt und anschliessend im Rückgriff auf Kontexte und individuelle Aussagen interpretiert wurden. Dieser methodische Loop ermöglicht eine simultane Auseinandersetzung mit deskriptiven, kausalen und prozesshaften Fragestellungen. Abschliessend wird diskutiert, wie klassische GT-Praktiken im digitalen Zeitalter – etwa im Kontext von NLP, KI-gestützter Analyse und transdisziplinärer Forschung – neue Relevanz erlangen. GT bietet eine bedeutungszentrierte Methodologie, die klassische empirische Forschung mit neuen digitalen Verfahren verbindet.

1. Introduction

The evolving landscape of social research is marked by both an abundance of data and a demand for integrative, reflective approaches. In this context, Mixed Methods research – defined by the systematic combination of qualitative and quantitative techniques for integrating data into theoretical meta-inferences – has gained increasing prominence. It allows researchers to address multifaceted social questions by moving between statistical generalisation and contextual interpretation, abstract patterning and lived experience. Yet while contemporary Mixed Methods designs often rely on explicit designs and integration procedures to connect different forms of data, theoretical perspectives, and analytic logics, a closer historical view reveals that some earlier research traditions were methodologically pluralistic from their inception.

This paper argues that Grounded Theory (GT) – developed in the 1960s by Anselm Strauss and Barney Glaser – is not only compatible with Mixed Methods but was conceptually born as one. Drawing from a research culture that resisted methodological binaries, GT integrated qualitative depth with quantitative pattern recognition through a process that was deeply recursive, reflexive, and comparative. Originating at the University of Chicago, GT was shaped by an empirical tradition that drew upon interviews, fieldwork, archival documents, and statistical records with equal rigour.

The paper focusses primarily on how Anselm Strauss developed a methodological loop that allowed theory to emerge from both narrative and numerical data. Central to this process was his view of numbers as symbolic abstractions – representations of meaning rather than endpoints. Drawing on examples from developmental psychology, urban sociology, and medical research, we show that Strauss did not treat numbers as replacements for interpretation. Rather, his work integrated different kinds of data, different methods of analysis, and the resulting insights in a recursive process of theory building.

In so doing, Grounded Theory anticipated many of the challenges and possibilities now confronting social research in the age of AI, big data, Natural Language Processing (NLP), and transdisciplinary collaboration: how to integrate large-scale and small-scale data, how to connect computational pattern detection with contextual interpretation, and how to build shared analytic frameworks across disciplines and stakeholders. In this sense, the paper speaks not only to data integration, but also to method integration and the integration of findings, all of which remain central concerns in mixed methods research. GT's epistemological openness and iterative logic make it ideally suited to projects that span methodological cultures and demand interpretive nuance without sacrificing conceptual clarity and systematic comparison. By revisiting its origins and mechanisms, this paper argues for the continued – and perhaps renewed – relevance of Grounded Theory as a meaning-centred, mixed methods framework for the digital and post-digital age.

2. Historical and Theoretical Foundations: A Tradition of Methodological Pluralism

The methodological foundation of Grounded Theory (GT) cannot be understood apart from its origins in the intellectual milieu of the University of Chicago in the 1930s and 1940s. Anselm Strauss, one of GT's co-founders, was trained in a context where the dichotomy between qualitative and quantitative research did not yet dominate methodological debates.

Work	Data Used
The Polish Peasant (1918–20)	7,000+ pages of letters & documents + immigration stats
The Hobo (1923)	Anderson's life history (early auto-ethnography) + field counts of hobo 'jungles'
The Growth of the City (1925)	Burgess used birth/death rates to draw neighbourhood lines
The Gang (1927)	Mapped 1,313 gangs; combined crime records & interviews
The Ghetto (1928)	Wirth triangulated survey data, maps, autobiographies
The Taxi-Dance Hall (1932)	Combined ethnographic observations with the collected city-wide survey data.

Table 1: Key Works Chicago School and their Data, Source: Works by the Authors.

Chicago sociologists mixed numeric census, hand-drawn maps, life histories, auto-biographies, auto-ethnography, court files, city health records and newspaper archives. Their works included a wide range of sources and inventions of new types of data collection. When Strauss reflected upon this experience, he noted (1991, 837) «There was

no self-consciousness about quantitative versus qualitative studies... [Chicago scholars] used both, or one or the other methods. They also used a variety of data sources: interviews, field observations, archival materials, library materials, diaries, government reports and statistics.» Rather than distinct traditions in tension, qualitative and quantitative approaches were treated as interchangeable tools – each capable of generating insight depending on the research question at hand.

The theoretical ambition of the (second) Chicago School, especially under the influence of figures like Herbert Blumer and Everett Hughes, was to understand the social processes and symbolic structures constructing everyday life. Method served this goal rather than the other way around.

This ethos of methodological pragmatism was deeply formative for Strauss. His early empirical studies are marked by a practical blending of techniques:

- In *The Development and Transformation of Monetary Meanings in the Child* (1952), he combined structured interviews and play-based observation with scalogram analysis to track developmental trajectories in children's conceptions of money.
- In *Cross-Class Interviewing* (1955), he used socioeconomic stratification to organise his sample, while relying on tape-recorded interviews and interactional analysis to uncover differences in communicative style.

These works were early expressions of an approach in which narrative data and statistical patterning were concurrently integrated from the beginning. Importantly, they were not presented as «mixed methods» in the contemporary sense; the term did not yet exist as a formal category. At the same time, not all studies that combine different forms of data or methods are labelled mixed methods even today. This makes it all the more important to examine earlier research traditions for forms of integration that were methodologically present before they were formally named. Instead, Strauss and his colleagues operated under a more organic model of empirical integration, one in which methods were selected and adapted in response to evolving conceptual and empirical needs.

This intellectual heritage carried over into the collaboration between Strauss and Glaser, culminating in *The Discovery of Grounded Theory* (1967). However, this book and Grounded Theory more generally is typically associated with the formalisation of qualitative theory-building. GT begins without preconceived theoretical assumptions, builds theoretical models through iterative coding, continuous comparison, and theoretical sampling for cases out of cases and is associated with mainly micro- and meso-sociological phenomena. Such a conception of GT seems, at first glance, less suited to the kinds of problems that mixed methods research is often expected to address: linking different forms of data, integrating levels of analysis, and combining contextual interpretation with more generalisable pattern detection. As such, this paper will explore an alternative version of GT that pre-dates these developments and focuses on the work of Anselm Strauss during his time at the University of Chicago (see figure 1).

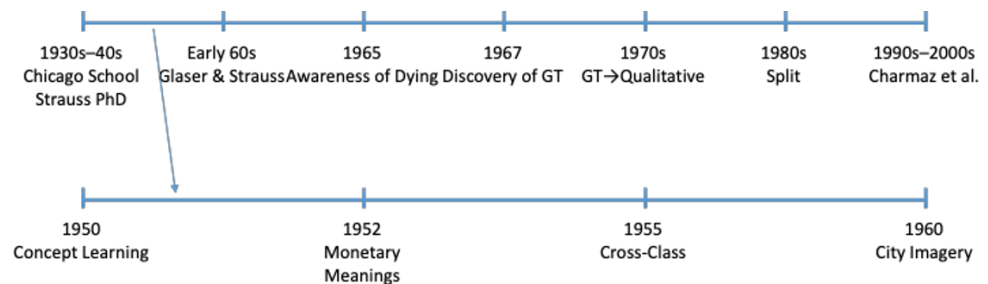


Fig. 1: Timeline of key stages in the development of Grounded Theory, with particular reference to Strauss's early work, Source: Authors.

Grounded Theory was never intended to be a «purely qualitative» method. Glaser (1978) explained, «There are no limits to the techniques of data collection, the way they are used, or the types of data required» (p. 151), and Strauss (1990, with Corbin) repeatedly argued for the integration of qualitative and quantitative data so long as this served the development of theoretical concepts (pp. 189–191). This «all is data» principle is fundamental to GT: the relevance of methods and materials is not fixed in advance, but emerges in relation to what is needed during the research process to refine categories, pursue comparisons, and deepen theoretical understanding. GT was, from its inception, a product of methodological multiplicity – a flexible, responsive system that embraced the complexity of empirical life. This foundational pluralism makes GT an ideal starting point for rethinking what mixed methods research can look like in a digital, transdisciplinary age. Its legacy offers a compelling model for integrating diverse data types and analytic strategies into theory-rich, socially grounded inquiry.

3. The Comparative Logic of Grounded Theory

At the core of Grounded Theory lies a powerful engine: systematic comparison aimed at synthesising different findings and gradually generalising them. This logic underpins the method's ability to move fluidly between narrative detail and abstraction across different forms of data, making it central to the integration of qualitative and quantitative evidence. As the constant comparative method can be used with any kind of data – interview data, field observations, documentary data, or statistical records (Glaser and Strauss 1965)¹ – it provides a foundation for what is now described in mixed methods research as both data integration (e.g. quantification and qualification) and results-based integration, culminating in the development of meta-inferences.

In GT, comparison is not just a way to «check» or «contrast» data; it is a generative process that shapes categories, builds theory, and links diverse forms of evidence into a coherent analytic framework. In this sense, GT is best understood as a methodologically

¹ See also Glaser's (2008, 1) later iteration, which notes that «GT is a general method applicable to any kind of data».

inclusive framework that anticipates key principles of triangulation, including both data triangulation (across different sources and types of data) and methodological triangulation (across different analytic approaches).

Strauss viewed comparison not merely as a way to contrast or verify data, but as a generative tool aimed at revealing underlying structures, surfacing variation, and tracing transformations. These are hallmark aims of sociological research. GT does not construct these aims from isolated observations, but from the constant comparison of data and categories. This entails:

- Data with data (e.g., comparing one interview incident to another),
- Data with categories (e.g., matching new statements to emerging themes),
- Categories with categories (e.g., refining properties or dimensional ranges).

This iterative process forms a methodological loop (see Figure 2) in which emerging concepts are continuously tested across diverse empirical materials, and generalisations are gradually developed through comparison. A central mechanism enabling this process is theoretical sampling, whereby cases, data sources, or methods are selected in response to the current state of theoretical development. Rather than aiming for representativeness, theoretical sampling seeks out contrasting and relevant cases that allow categories to be refined, extended, and related – thereby supporting the development of robust meta-inferences.

Using rich data collection, transforming qualitative material through processes that mixed methods research would describe as quantification (e.g. coding, scoring, classification), detecting patterns, and then returning to the underlying material through processes akin to qualification creates a recursive analytic cycle. This movement between abstraction and interpretation ensures that patterns identified in one form of data are systematically related back to their contextual meanings in another. This recursive cycle may appear similar to contemporary AI or computational workflows; however, its purpose is methodological rather than technical. The repeated movement between data forms allows researchers to validate emerging categories, identify contradictions, and refine interpretations across different types of evidence. As will be elaborated later (see Section 4), this looping process is essential for maintaining both conceptual precision and empirical grounding.

Importantly, this comparative logic predates its formalisation in the late 1960s and was already evident in Strauss's earlier independent work. His engagement with developmental, socio-cultural, symbolic, and structural comparison drew on a wide variety of data sources and required integrative analytic strategies. In contemporary terms, these strategies can be understood as combining data integration, methodological triangulation, and results-based integration within a single, iterative process of theory construction.

3.1 Developmental Comparison

In *The Development and Transformation of Monetary Meanings in the Child* (1952), Strauss analysed interviews with children aged 4.5 to 11.5. Through structured questions and observational tasks, he elicited explanations for how children understood money, value, and exchange. Importantly, he did not stop at the raw responses. Instead, he conducted developmental comparisons across age groups, identifying patterns that formed the basis for nine conceptual stages. Each stage was defined not only by behavioural outcomes but by qualitative differences in reasoning – a child's «incorrect» answer might be developmentally more advanced than a younger child's «correct» one, depending on how it was explained.

This approach enabled Strauss to combine a structured coding frame (via scalogram analysis) with interpretive analysis in a stepwise process: responses were first coded and ordered quantitatively, then compared across cases, and finally reinterpreted in light of children's explanations. In mixed methods terms, this involved both data integration (through quantification of responses) and results-based integration, where patterns identified in the scale were systematically related back to narrative reasoning. The added value of this comparison lay in the ability to identify not only developmental stages («what»), but also the underlying reasoning processes («why»), which would not have been visible through either approach alone.

3.2 Socio-Cultural Comparison

In *Cross-Class Interviewing* (1955) and *Social Class and Modes of Communication* (1955, with Schatzman), Strauss used comparison to understand how class position shapes language use, reasoning, and interaction. Here, he compared transcripts of interviews conducted with respondents from working-class and middle-class backgrounds. The contrasts extended beyond vocabulary or sentence complexity to include:

- Role-taking capacity (ability to anticipate the listener's perspective),
- Level of abstraction in responses,
- Temporal structuring of narrative (e.g., sequence and coherence).

These were not superficial stylistic differences but deep-seated cultural and communicative patterns. Strauss showed how class structure manifested in forms of expression, thus integrating sociological theory with linguistic and cognitive analysis.

Again, the comparative frame was multidimensional: the class-based sampling provided a quantitative scaffold, while the close reading of language and behaviour yielded qualitative richness. Each mode of data was systematically compared and integrated: coded patterns of communication were first analysed across social groups, and then linked back to specific interview passages to interpret how these patterns were produced in context. This results-based integration generated insights that extended

beyond either dataset alone, allowing Strauss to relate measurable differences in communication to underlying social and cultural processes.

Strauss's later collaborative work with Glaser extended comparison into institutional and symbolic contexts. For example, in *The Social Loss of Dying Patients* (1964), they compared how patients were socially valued based on attributes like age, profession, and family status. This analysis involved:

- Ranking patients implicitly through staff discourse,
- Interpreting narratives of care and withdrawal of medical attention,
- Connecting structural inequality with experiential trajectory.

These elements were not analysed in isolation but integrated through constant comparison: patterns in staff evaluations (e.g. implicit ranking of patients) were compared with narrative accounts of care practices and then related to broader structural positions such as age or social status. In mixed methods terms, this constitutes data triangulation (across discourse, narratives, and institutional indicators) and results-based integration, where different strands of evidence were combined to generate a more comprehensive explanation of how social value shaped treatment trajectories.

Thus, comparison became a stepwise process of iterative comparison and abstraction, linking micro-level narratives (patient stories, nurse interviews) to macro-level structures (hospital hierarchy, economic worth) through repeated integration of findings across data types. This dual function exemplifies the comparative logic of GT: moving across scale and method through repeated comparison of coded patterns and contextualised cases, thereby generating integrative theory in the form of meta-inferences that linked individual experiences with broader structural dynamics.

3.3 Comparison as Integrative Strategy

An important feature of mixed methods research is how it integrates comparative findings to produce a more nuanced understanding of the research problem (Fetters and Molina-Azorin 2017).

Rather than focusing on predefined designs, what is more relevant in this context is how different forms of data and findings are integrated. Mixed methods research distinguishes between data integration (e.g. quantification and qualification), results-based integration, and the development of meta-inferences that synthesise insights across analytic strands (Bazeley 2018). From this perspective, GT's constant comparative method can be understood as an inherently integrative process, in which data from different sources and levels of abstraction are continuously related to one another to refine categories and build theory. While some authors suggest that GT aligns particularly well with exploratory sequential designs (Charmaz et al. 2018), its comparative logic is not limited to a single design type. Rather, its strength lies in its flexibility: the iterative movement

between data, analysis, and theory allows it to be embedded in different mixed methods configurations, including convergent and sequential approaches, depending on the research problem. The subsequent comparative integration makes it possible to:

- Validate emerging categories across different types of data,
- Reveal contradictions or silences between data forms,
- Expand category dimensions through cross-case analysis.

In this way, comparison becomes not a technical step, but a conceptual engine that allows GT to unify qualitative sensitivity with quantitative structure.

One of the most insightful and enduring contributions of Anselm Strauss to social research is the development of a methodological loop – a dynamic, recursive process that allows theory to emerge from both qualitative and quantitative data through a sequence of abstraction, testing, interpretation, and refinement. Unlike linear research models, where data collection, analysis, and theory-building occur in discrete phases, Strauss envisioned these processes as cyclical, mutually reinforcing, and analytically integrated. This methodological loop allows researchers to move iteratively between different forms of representation – such as narrative accounts, coded categories, and numerical patterns – without assigning these exclusively to qualitative or quantitative approaches. Both types of research involve abstraction and generalisation; what distinguishes Strauss's approach is the explicit integration of these forms through recursive comparison.

4. Stages of the Loop

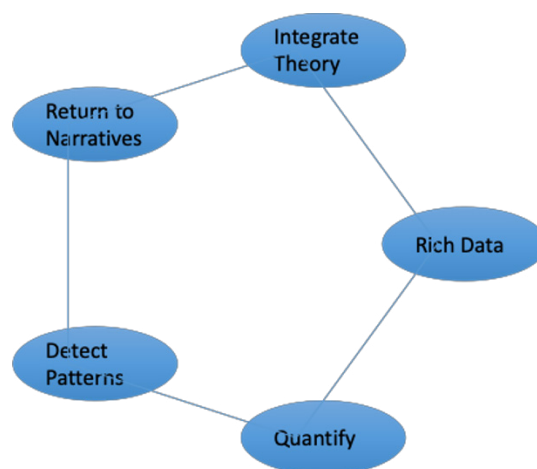


Fig. 2: Methodological Loop, Source: Authors.

Strauss's methodological loop (see Figure 2) has five key stages that recur both flexibly and iteratively throughout the research process. In mixed methods terminology, this loop combines quantification, qualification, and results-based integration, culminating in the construction of meta-inferences.

1. Rich empirical data collection: Emphasis on detailed, flexible, often open-ended instruments (e.g. semi-structured interviews, observational field notes) designed to elicit both narrative explanation and patterned behaviour.
2. Quantification of responses (in mixed methods terms, quantification): Responses are transformed into structured formats through coding, scoring, or classification schemes. For example, in the monetary development study, Strauss applied scalogram analysis to determine how children's answers clustered into developmental stages.
3. Pattern detection and statistical abstraction: Using the quantified data, researchers identify patterns, frequencies, or correlations. In Strauss's studies, these patterns often revealed underlying conceptual structures (e.g. levels of abstraction in communication, understanding of exchange).
4. Return to narrative material (in mixed methods terms, qualification): Rather than concluding the analysis with statistical findings, Strauss returned to the transcripts or observational notes to interpret anomalies, refine categories, and ensure that abstraction remained tied to lived meanings.
5. Theoretical integration (development of meta-inferences): Through this process, Strauss built grounded theoretical models that were not only empirically valid but also conceptually rich – able to explain not just what occurred, but how and why it occurred in context.

Rather than a strictly linear sequence, these stages form a recursive and emergent process, in which data integration and results-based integration occur repeatedly throughout the analysis.

4.1 Case Example: Concept Learning by Scale Analysis

In *Concept Learning by Scale Analysis* (1950, with Schuessler), Strauss applied this loop in a tightly controlled educational study. Children were asked a series of tasks involving money recognition, value comparison, and equivalence. Their answers were coded and analysed using Guttman scaling, a statistical technique that orders items by difficulty and identifies cumulative knowledge levels.

But rather than stopping at numerical differentiation, Strauss returned to the children's explanations – often unexpected, metaphorical, or logically inconsistent. A child might answer correctly because of a rule they had misunderstood (e.g. «bigger coins are always worth more»), which would mask a developmental misconception. These cases

were treated not as errors but as data requiring interpretive attention. This recursive movement between scored answers and narrative reasoning allowed Strauss to construct a model of concept acquisition that was sensitive to both process and structure.

4.2 Looping in Transcripts: Class and Communication

In *Social Class and Modes of Communication* (1955), Strauss examined 340 disaster interviews, stratified by income and education. After coding responses for linguistic and cognitive markers (e.g. ability to sequence events, use of abstraction), he analysed patterns by group and then returned to individual transcripts to explore communicative strategies. This allowed him to show, for example, that working-class respondents tended to describe events in concrete, sequential terms tied to immediate experience, whereas middle-class respondents more often used abstract language, hypothetical reasoning, and generalisations. By linking these observable differences to broader social practices and educational experiences, Strauss was able to theorise how social class shapes both self-presentation and narrative construction.

This looped structure closely mirrors what in mixed methods research is considered as data integration, results-based integration, and the development of meta-inferences, whereby insights from different forms of analysis are systematically combined into a coherent theoretical explanation. It avoids the pitfall of sequential dominance (where one method dictates interpretation), ensures that statistical generalisation remains contextually grounded, and allows the research question to be refined during analysis rather than treated as fixed, reflecting what mixed methods research describes as emergent designs or emergent aspects within a design, in which research questions and analytic strategies are refined during the research process. Moreover, the logic of the loop anticipates digital approaches like machine learning with human-in-the-loop design, where algorithmic output is adjusted through qualitative judgment. Grounded Theory, especially in Strauss's formulation, thus offers a conceptually mature prototype for hybrid research long before such tools existed. Like Strauss's recursive coding logic, Deterding and Waters (2021) propose a digital-age model of flexible coding that integrates inductive sensitivity with computational support – bridging analytic structure with interpretive fluidity.

5. Numbers as Representations of Social Meaning

A defining feature of Anselm Strauss's (1952) methodological vision was his reconceptualisation of numbers as representations of social meaning, rather than as static or objective facts. In many research traditions, particularly those influenced by positivist paradigms, numbers are regarded as endpoints of abstraction: fixed indicators of underlying truths, validated through replication and predictive power. Strauss challenges this

view by insisting that numbers themselves are symbolic, emerging from and returning to social, cultural, and cognitive contexts. For him scores were signposts – never end-points. This is a significant insight, which we will now unpack further.

5.1 Quantification as Abstraction, Not Reduction

In Strauss's early developmental studies, quantification was used not to reduce complexity but to map its structure. Consider his *Development and Transformation of Monetary Meanings in the Child* (1952). In this study, children were presented with tasks involving coins, purchases, and imagined exchanges. Their responses were assigned scores based on correctness and sophistication, and these were arranged using scalogram analysis to produce nine developmental stages. Strauss applied 'scale analysis' to children's evolving understandings of money. The numerical data generated through interviews and scoring mechanisms were not treated as endpoints, but as windows into the symbolic worlds children inhabited. Each number on the developmental scale represented a position in a social learning trajectory, rather than a static measurement of ability or knowledge. Strauss (1952, 275) noted that «items were scored by arbitrary weighting» and that children were «arrayed in rank order by total score» based on their answers to questions about money concepts. This numerical stratification was not used to rigidly classify individuals but to trace conceptual development through comparative ranking, allowing him to discern meaningful patterns in how children interpreted economic transactions, such as saving, spending, and earning. As Strauss (1952, 275) put it: «the cumulative development of a number of interrelated monetary meanings or concepts is traced in considerable detail,» which exemplifies his view that numbers are relational indicators of meaning rather than standalone facts.

However, the genius of Strauss's approach lies in what he did next: he returned to the narrative data – the interviews and behavioural observations – to interpret what the scores actually meant. A child who answered incorrectly may have offered an answer based on emerging but still-incomplete reasoning. For instance, a child might say that «a penny is worth more than a dime because it's bigger.» Such a response is «wrong» in a narrow economic sense, but reveals a conceptually rich, if developmentally early, form of reasoning. In this way, Strauss uses numbers as signposts of conceptual progress, not as judgments of success or failure. Each score invites a deeper inquiry: *Why did this answer occur? How does this reasoning develop? What does it tell us about the child's socialisation into economic systems?*

5.2 *Numbers in Class and Communication Studies*

This same interpretive logic appears in Strauss's work on communication and social class. In *Social Class and Modes of Communication* (1955), interviews were stratified according to participants' income and education. Coding schemes were used to classify communicative patterns – such as use of abstract language, logical sequencing, and perspective-taking – and frequencies of these codes were analysed across class groups.

But the codes were not treated as *facts*; they were heuristics, developed to capture subtle differences in how individuals constructed and conveyed meaning. The statistical outputs helped identify macro-level trends (e.g. systematic differences in abstraction, sequencing, and perspective-taking across social class groups), but the deeper understanding came from returning to the interview transcripts: examining *how* and *why* a working-class respondent told a story in concrete terms, often describing events as they occurred step by step and tied to immediate experience, whereas middle-class participants more frequently used hypotheticals (e.g. «if that were to happen...») or generalisations (e.g. drawing broader conclusions beyond the specific situation). These differences indicate varying degrees of abstraction and perspective-taking, which Strauss related to differences in socialisation and communicative practices.

By oscillating between abstraction and narrative, Strauss transformed quantification into a meaning-generating mechanism, allowing him to theorise class-based variation not just in access to knowledge, but in symbolic and linguistic repertoires.

5.3 *Numbers as Relational, Not Absolute*

Strauss's treatment of numbers is inherently relational: scores and frequencies gain meaning only in relation to the theoretical framework, the context of use, and the narrative substance – for example, developmental or class-based models, educational or medical settings, and the ways people express reasoning or emotion. This perspective challenges the assumption that numbers are «harder» or more valid than narratives. Instead, they are treated as one register of meaning among many – powerful in pattern detection, but only intelligible when tethered to lived experience.

To understand why this approach is so intellectually generative, we must connect it with broader theoretical insights on the nature of meaning. According to Morgner (2022), meaning is not simply a product of symbolic acts; rather, it is the structural condition that makes those acts interpretable in the first place. Meaning exists only in relation to a surplus of possibilities – it is «selection» among many alternatives. Strauss' statistical analyses function within this framework: by assigning numerical values to symbolic behaviours (such as how a child defines or uses money), Strauss is not reducing meaning to numbers, but selectively encoding meanings to track their transformation over time. For example, when a child is assigned a higher position in a developmental scale, this does not simply indicate «more knowledge,» but reflects a shift in how value

and exchange are conceptually understood (e.g. moving from size-based reasoning to relational value). Similarly, in communication studies, frequency counts of abstract expressions point to underlying differences in how individuals organise and generalise experience. This movement between the qualitative world of interviews and the quantitative structure of scale analysis is emblematic of what Morgner (2019), building on Dewey, might call a transactional logic of inquiry. In Dewey's terms, a transaction is a non-dualistic process in which observer and observed co-emerge within an unfolding relational event. Numbers, then, are not fixed truths but part of a relational matrix – a way of seeing how meanings shift through interaction, development, and reflection.

Strauss's method forms a methodological loop: he begins with qualitative sense-making (children's interviews), translates these into a numerical model (scale scores), and then returns to interpretation by analysing how individuals move between positions in the scale (rank shifts) and how these shifts correspond to changes in reasoning patterns (e.g. from concrete to relational or abstract explanations). This enables a bidirectional reading of data, in which numbers illuminate qualitative change and narratives anchor abstract patterns in lived experience – a structure that closely anticipates what contemporary scholars (e.g. Fetters and Molina-Azorin 2017) call «data integration» in mixed methods, alongside results-based integration and the development of meta-inferences, with processes such as quantification and qualification supporting the translation between different forms of data. Alqazlan et al. (2025) add that «human-in-the-loop» approaches enable researchers to iteratively refine computational text analyses through qualitative interpretation – mirroring Strauss's recursive loop between narrative and numerical analysis. Such a strategy resists the positivist tendency to isolate quantitative data from the contexts in which they are generated. Strauss' numbers are deeply situated, shaped by class, gender, age, and educational background. They operate as signs within a semantic field, not just variables in a regression. This elevates Strauss' work into a meaning-centred framework – one that aligns remarkably well with contemporary relational sociology and Mixed-Methods research, where integration, not purity, is the hallmark of rigour.

6. Integrating What, Where, Why, and How: The Multidimensional Power of Grounded Theory

What	Why	Where	How
What is happening? How much?	Why does something happen? (causal explanation)	In what context does something happen? (institutional or symbolic context)	How does it unfold? How does it work?
Quantitative	Quantitative	Qualitative	Qualitative

Table 2: Research Questions: Quantitative versus Qualitative, Source: Authors.

Current research practices have a strong tendency to divide the most common types of research questions, e.g., what and why as well as where and how into different types of methodological strategies, e.g. what and why as predominantly quantitative as well as where and how as predominantly qualitative. In contrast, GT stands apart from many other methodological frameworks in its ability to simultaneously address the what, where, why, and how of social phenomena. This multidimensionality is not a byproduct of combining methods at the surface level but emerges from the integrated structural logic and analytic flexibility of GT itself. Rather than isolating these dimensions into separate methodological phases or data streams, GT uses recursive comparison and theoretical sampling to interweave them into a coherent, evolving analysis.

6.1 The «What»: Description and Categorisation

The most basic function of empirical research is to describe what is happening. In GT, this corresponds to the early stages of coding and category generation. Through open coding of narrative material – be it interviews, observations, or documents – researchers identify incidents, events, and actions that reappear across cases. These become the basis for emerging categories. Strauss's work continually used structured comparison to test and refine categories – checking their validity across individuals, groups, and contexts. This allows GT to build typologies that are both empirically grounded and analytically robust.

In Strauss's study on children's understanding of money, the «what» was captured through behavioural responses to structured tasks. These responses were then categorised and analysed for developmental patterns, providing a descriptive map of how children move, for example, from judging value based on physical size («bigger coins are worth more») to understanding relational value and exchange equivalence.

6.2 The «Where»: Contextual Variation

Where something occurs – both socially and situationally – matters for how it is interpreted. GT builds this sensitivity into its design through theoretical sampling, where new data are collected to test emerging categories in diverse contexts (Gibson & Morgner 2026).

Strauss often structured his studies around sociological contrasts – for example, comparing communication styles across social classes, or conceptual development across age cohorts. In these cases, the «where» included not only physical or institutional settings (e.g. schools, hospitals) but also social locations (e.g. class, age, role). By structuring data collection in this way, Strauss ensured that his theories could account for contextual variability, not just abstract patterns.

In *The Social Loss of Dying Patients* (1964), the context of patient care (e.g. terminal ward vs. emergency room) shaped not only the treatment trajectory but also the symbolic value ascribed to the patient. The «where» was critical for understanding not only what occurred but how it was interpreted by staff and institutionalised into routines.

6.3 The «Why»: Causal and Motivational Logic

GT is not content with merely describing surface patterns. It aims to uncover the underlying processes, motivations, and social mechanisms that explain why people act and interpret the world in particular ways. Strauss's approach to causality is not deterministic or linear but relational and processual. It emerges from repeated comparisons across incidents, where researchers ask: *Under what conditions does this category apply? What triggers change or continuity?*

For example, in studies of communication, Strauss sought to explain why middle-class respondents tended to use more abstract language. The answer was not simply «education» or «training» but a constellation of social practices: role-taking in everyday conversation, exposure to formal institutions, and habitual engagement with abstract reasoning. These insights arose through constant movement between narrative data and theoretical concepts – precisely the recursive logic that defines GT.

6.4 The «How»: Processes and Interactional Sequences

Perhaps the greatest strength of GT lies in its capacity to model how phenomena unfold over time – in short, to trace process. From its origins, GT was intended to be a theory of action and interaction, grounded in real-time accounts of how people respond, adjust, and construct meaning through interaction.

Strauss's methodological loop (as discussed in Section 4) enables this temporal sensitivity. Researchers are not only identifying static codes but also mapping sequences, trajectories, and turning points. For instance, in Strauss's later work on chronic illness and healthcare (e.g. *The Social Organization of Medical Work*), he analysed how patients, families, and healthcare providers navigate institutional pathways. The «how» involved recursive planning, role negotiation, and symbolic framing – each of which could only be seen through longitudinal observation and comparative coding.

7. Discussion: Relevance to Digital and Transdisciplinary Research

In today's research environment, Grounded Theory's original strengths have gained new relevance. As digital tools become more embedded in social research – particularly through data-intensive methods like Natural Language Processing (NLP), machine learning, and hybrid computational platforms – there is renewed interest in methodologies

that can manage epistemological diversity, analytic recursion, and theoretical integration. Grounded Theory, particularly in its classic formulation by Anselm Strauss, is ideally suited to these challenges.

7.1 Bridging Theoretical Sensitivity with Digital Scale

One of the defining characteristics of digital-era research is its ability to collect and process large volumes of unstructured data. From social media posts and interview transcripts to user-generated documents and multimodal content, contemporary researchers are often overwhelmed not by a lack of data, but by an excess of it. Techniques such as automated coding, topic modelling, and sentiment analysis promise to reduce this complexity by identifying patterns at scale (see e.g. Boyd & Crawford 2012). However, these methods can lack contextual nuance, especially when they are trained on datasets that do not reflect the rich social and symbolic variation found in real-life settings.

Grounded Theory offers a counterbalancing logic: its methodological loop provides a way to re-integrate human judgment and interpretive reasoning into algorithmic workflows. Topic models can propose candidate themes that are then refined through open and focused coding; for example, topic modelling outputs can be used to identify initial thematic clusters, which are then compared with manually coded interview segments, refined through constant comparison, and linked back to contextual interpretations. In this way, computational patterns are not treated as final results but as inputs into an iterative process of comparison and interpretation, similar to Strauss's use of rank-order scoring alongside narrative analysis (Sripathi et al., 2024). In this way, Grounded Theory anticipates what is now called «human-in-the-loop» learning, where machine insights are continuously refined by human interpretation (see also Hadley (2025) and Mao, et al. (2023)). GT's recursive integration of qualitative and quantitative data finds a contemporary analogue in tools like MAXQDA's joint displays, which facilitate dynamic interplay between narrative data and coded patterning (Kuckartz & Rädiker, 2023). It is possible to embed such digital tools within a broader epistemological ecosystem. In all these cases, GT provides a conceptual bridge, allowing diverse perspectives to converge around a shared analytic process. The result is not just a synthesis of methods, but a synthesis of ways of knowing. Proudfoot (2023) describes such hybrid analytic models that alternate inductive coding with deductive patterning – a balance already embedded in GT's constant comparative method and theoretical sampling.

7.2 *Supporting Transdisciplinary and Third Mission Research*

Beyond the digital, Grounded Theory is particularly well-suited for transdisciplinary and Third Mission research, where scholars collaborate with practitioners, community members, or policy actors to co-produce knowledge that is both academically rigorous and socially actionable.

Such research raises methodological dilemmas: how to balance scientific abstraction with experiential depth, how to link macro-level policy analysis with micro-level lived experience, and how to integrate diverse forms of knowledge – technical, intuitive, and cultural? Grounded Theory addresses these questions not only by accommodating multiple forms of data, but by treating them as mutually constitutive. Community narratives, stakeholder interviews, field notes, and statistical reports all feed into a single analytic system, in which categories are not pre-set but emerge through dialogue across data types, stakeholders, and levels of analysis. Strauss's legacy, particularly in his studies of institutional systems (e.g. hospitals, schools, professions), demonstrates how theory can be built not just *about* people but *with* them. More recently, like Strauss's engagement with institutional actors in medical sociology, Guan et al. (2025) show how mixed methods can scaffold participatory designs where data and theory emerge dialogically with communities. This resonates deeply with the Third Mission ethos, where research is expected to be dialogical, ethical, and socially embedded.

This also resonates with researcher triangulation, where different actors (e.g. researchers, practitioners, community members) contribute to the interpretation of data, and with participatory mixed methods approaches such as action research (Ivankova 2014), in which data collection, analysis, and theory development are carried out collaboratively. In this sense, GT's integrative logic not only supports methodological pluralism but also facilitates the inclusion of multiple perspectives in the co-production of knowledge.

7.3 *Compatibility with Open Science and Reproducibility*

In contemporary debates on transparency, data sharing, and open research, GT may seem at odds with trends that prioritise standardisation. However, seen through Strauss's symbolic approach, GT offers an alternative model of transparent reasoning, in which the logic of theory construction is clearly documented through memos tracing conceptual development, audit trails of coding and comparison, and narrative justifications for theoretical decisions. Moreover, GT software (e.g. MAXQDA, Atlas.ti, NVivo) increasingly supports joint displays and linked analyses, enabling researchers to visualise the connections between numeric patterns and coded narratives. These affordances align GT with data integration models advocated by computational social science, without sacrificing its interpretive strengths.

8. Conclusion

This paper has argued that Grounded Theory should not be viewed as a qualitative method later adapted for mixed methods use. Instead, it was from the outset a genuinely integrative framework – a mixed methods design in spirit, if not in name. Through its use of comparative logic, its recursive methodological loop, and Strauss's treatment of numbers as representations of social meaning, GT offers a model for research that moves seamlessly between narrative and numeric data, between lived experience and theoretical abstraction.

Such a model is especially valuable today, as researchers navigate the twin imperatives of digital innovation and transdisciplinary relevance. In an age of AI-driven analysis, big data, and collaborative knowledge production, Grounded Theory offers a tested, adaptable way to prevent meaning from being lost in the machinery of analysis. Its iterative structure is well suited to «looping» machine-learning outputs through human interpretation; its comparative logic ensures that statistical categories are checked against cultural and situational realities; and its openness to diverse data types makes it a flexible tool for fields ranging from urban design and public health to education and platform governance.

Equally, Grounded Theory's legacy speaks to the aims of the Third Mission in higher education – namely, the production of knowledge that is empirically grounded, socially meaningful, and co-produced with stakeholders. Strauss's work reminds us that theory should not only explain the world but also reflect the ways people live and interpret their lives within it.

In embracing a meaning-centred approach to mixed methods, Grounded Theory continues to serve as a guidepost for researchers navigating the complex, data-saturated, and socially entangled landscape of contemporary inquiry. It invites us not to choose between numbers and narratives, but to think with both – recursively, comparatively, and reflexively – in the service of better theory, better understanding, and ultimately, better futures.

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