

 @agileRashina

Summary Slides



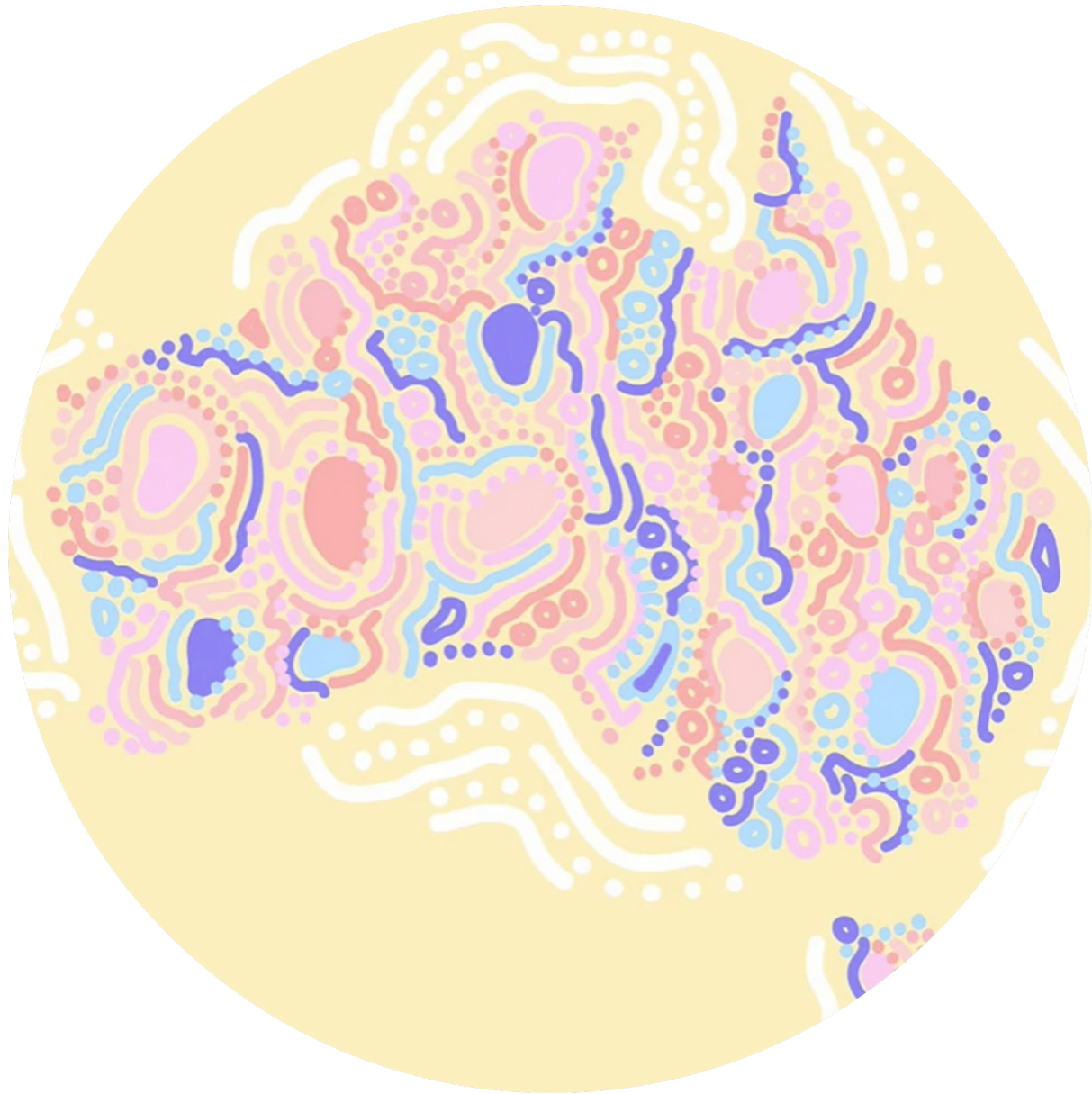
[www.rashina.com/stgt](http://www.rashina.com/stgt)

# Technical Briefing on Socio-Technical Grounded Theory for Qualitative Data Analysis

**Associate Professor Rashina Hoda**  
Monash University, Melbourne

We're hiring!





# Acknowledgement of Country

I would like to acknowledge the  
traditional owners and custodians of  
the land, the Peoples of the  
**Kulin Nation.**

I pay my respects to their elders, past,  
present, and emerging. I also extend  
my respects to all the people present  
here today.



# How we will spend the next 90 mins...

## Warm up



Basics of Qual  
Data Analysis  
with STGT



STGT Examples



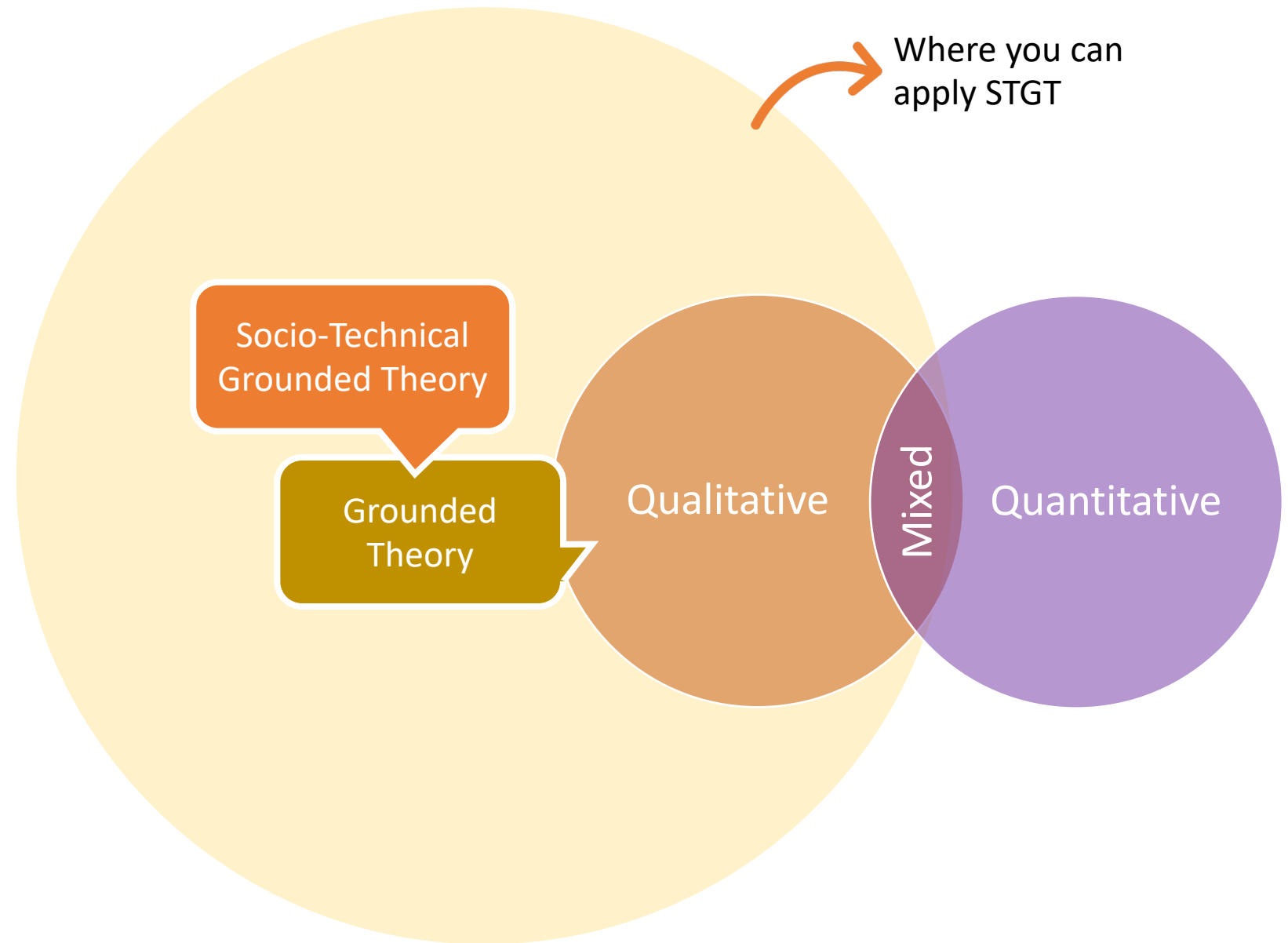
Hands-on  
Exercises



Questions and  
Discussion

## Wrap up and Feedback

# Who is here?







Learning and Teaching Building, Clayton Campus



Green Chemical Futures Building, Clayton Campus

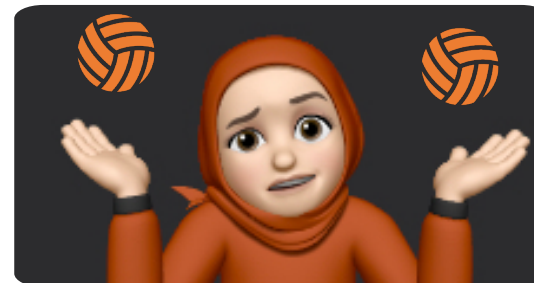
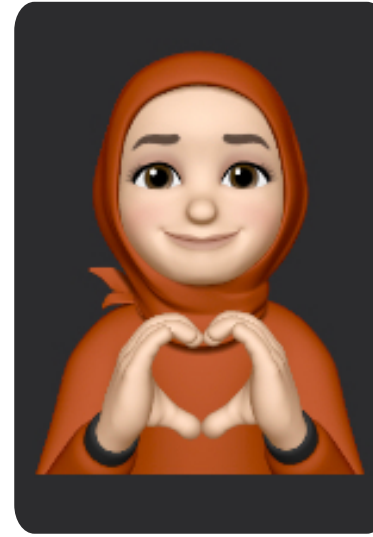
# Monash University Melbourne

---



# About Me

Associate Professor	Mom	Group Lead, Software Engineering
Wife	Researcher	Daughter
Deputy Director, HumaniSE Lab	Sister	Women in STEM Champion
PhD Supervisor	Software Developer	Friend
Educator	Aspiring Book Author	Theorist





# Setting Expectations

## Focusing on

- qualitative data analysis using STGT

## Not focusing on

- theory development using STGT
- philosophy and research paradigms
- sampling, data collection, literature reviews, evaluation...
- comparisons to other versions, methods...

**Unless...** you ask, and we have time :)



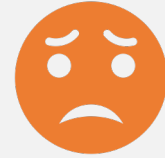
# Basics of Qualitative Data Analysis with STGT



# Why Qualitative?

- Understand the human perspective on your topic
- Explore phenomena that are new, not well understood, or need a re-examination
- Go deeper with the what's and the how's
- Answer the critical why's
- Harness the power of emergence
- Support the quantitative findings
- Develop theories, frameworks, taxonomies, models, descriptive findings...





What words and emotions  
come to mind when you hear  
“qualitative data analysis”?



1. Individual

2. Share



We are often  
apprehensive of  
qualitative data...

Why?

- There's lots of it!
- It's messy
- It's hard work
- It takes training
- It takes practice



# Socio-Technical Grounded Theory

3808

IEEE TRANSACTIONS ON SOFTWARE ENGINEERING, VOL. 48, NO. 10, OCTOBER 2022

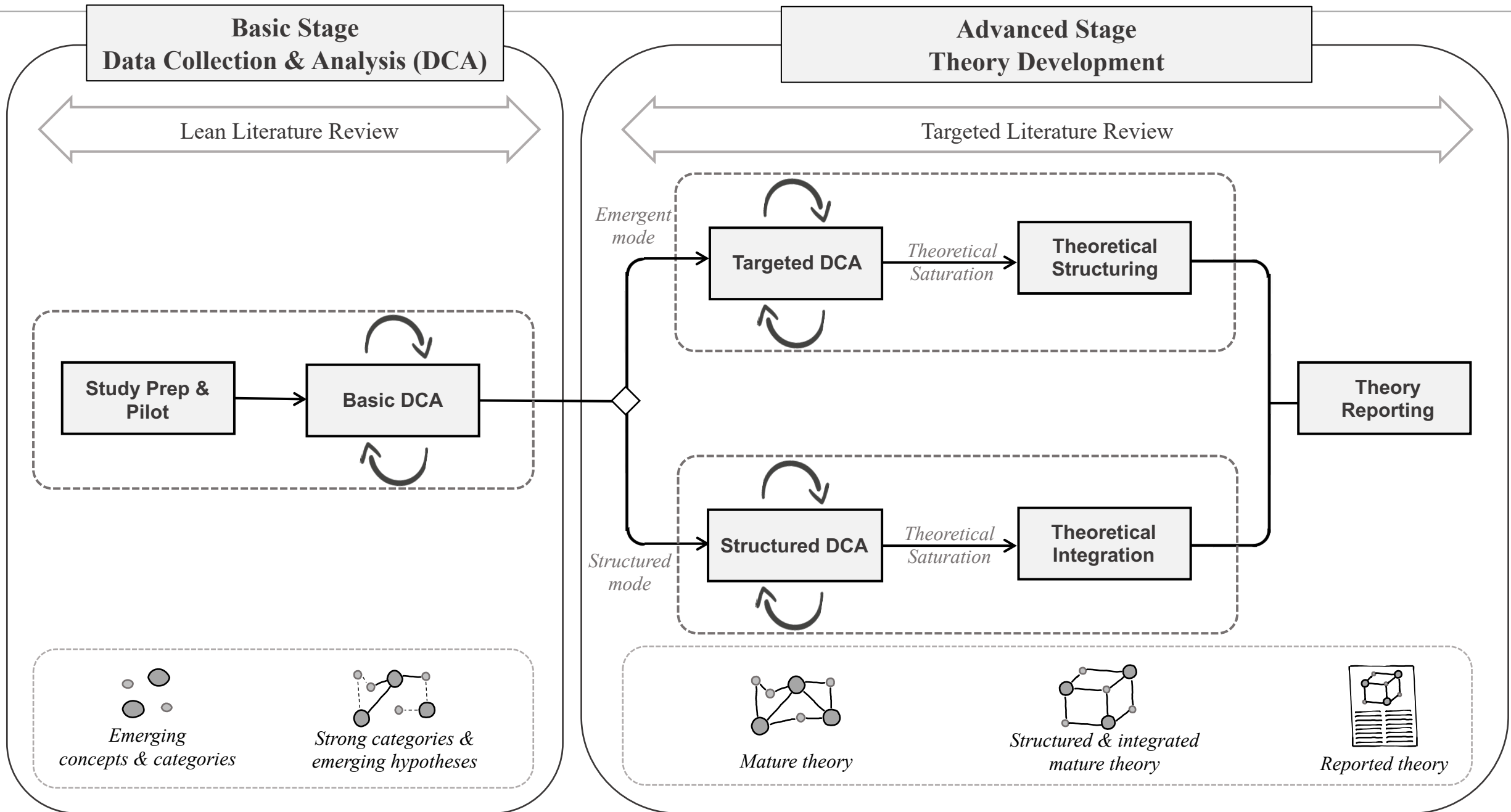
## Socio-Technical Grounded Theory for Software Engineering

Rashina Hoda 

**Abstract**—Grounded Theory (GT), a sociological research method designed to study social phenomena, is increasingly being used to investigate the human and social aspects of software engineering (SE). However, being written by and for sociologists, GT is often challenging for a majority of SE researchers to understand and apply. Additionally, SE researchers attempting ad hoc adaptations of traditional GT guidelines for modern socio-technical (ST) contexts often struggle in the absence of clear and relevant guidelines to do so, resulting in poor quality studies. To overcome these research community challenges and leverage modern research opportunities, this paper presents *Socio-Technical Grounded Theory* (STGT) designed to ease application and achieve quality outcomes. It defines what exactly is meant by an ST research context and presents the STGT guidelines that expand GT's philosophical foundations, provide increased clarity and flexibility in its methodological steps and procedures, define possible scope and contexts of application, encourage frequent reporting of a variety of interim, preliminary, and mature outcomes, and introduce nuanced evaluation guidelines for different outcomes. It is hoped that the SE research community and related ST disciplines such as computer science, data science, artificial intelligence, information systems, human computer/robot/AI interaction, human-centered emerging technologies (and increasingly other disciplines being transformed by rapid digitalisation and AI-based augmentation), will benefit from applying STGT to conduct quality research studies and systematically produce rich findings and mature theories with confidence.

**Index Terms**—Socio-technical grounded theory, STGT, grounded theory, GT, software engineering, research method, theory, theory development, qualitative research, data analysis, guidelines, evaluation

Hoda, R. (2021). Socio-technical Grounded Theory for Software Engineering, IEEE Transactions on Software Engineering, 48(10), 3808-3832.



# STGT – Possible Applications and Outcomes

## Full STGT Study

- Basic Stage + Advanced Stage  
=> mature theory, theoretical model, frameworks, taxonomies

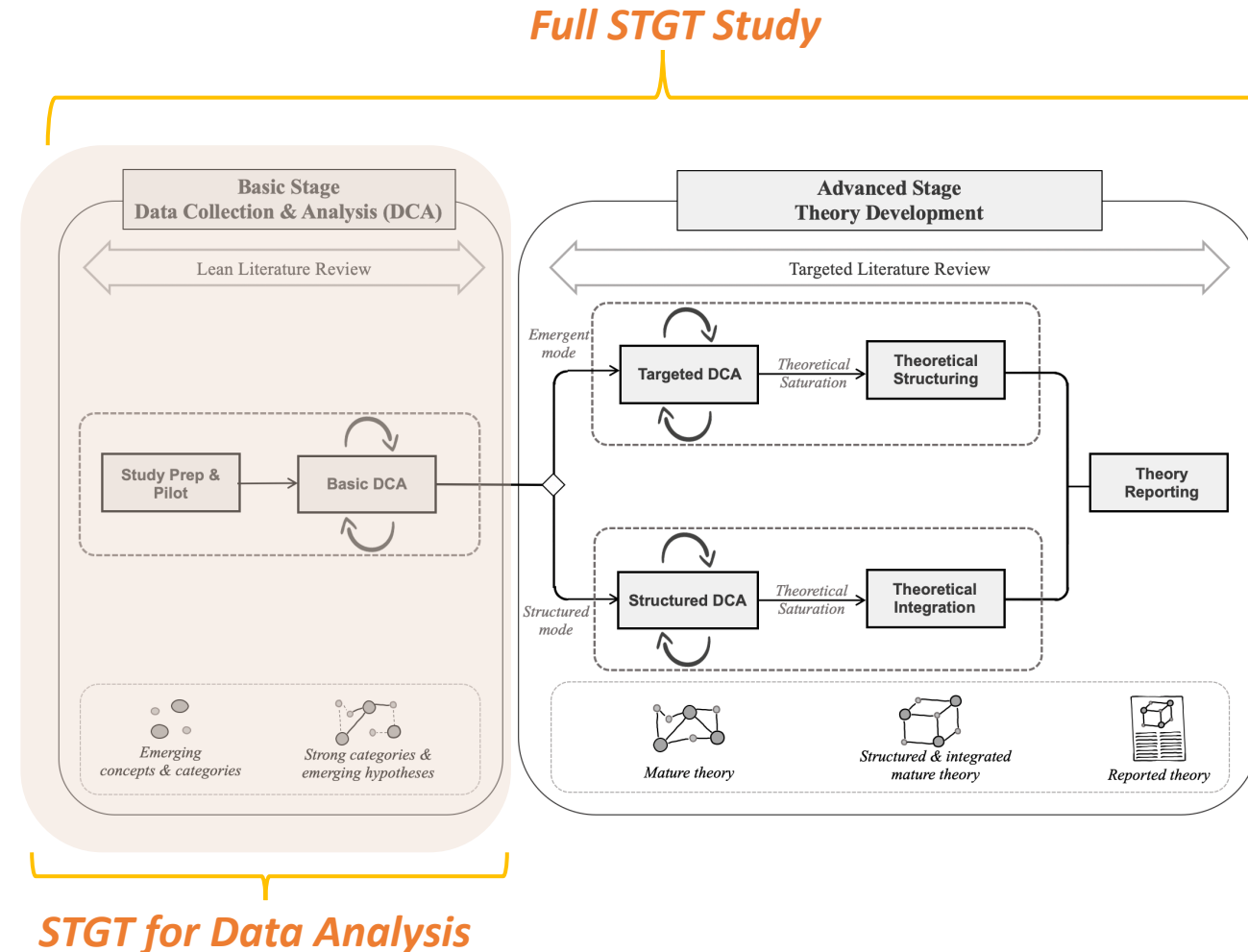
## STGT for Data Analysis



- Basic Stage (or Basic DCA)  
=> descriptive concepts, categories, *emerging* (hypotheses, propositions, models, frameworks, taxonomies)

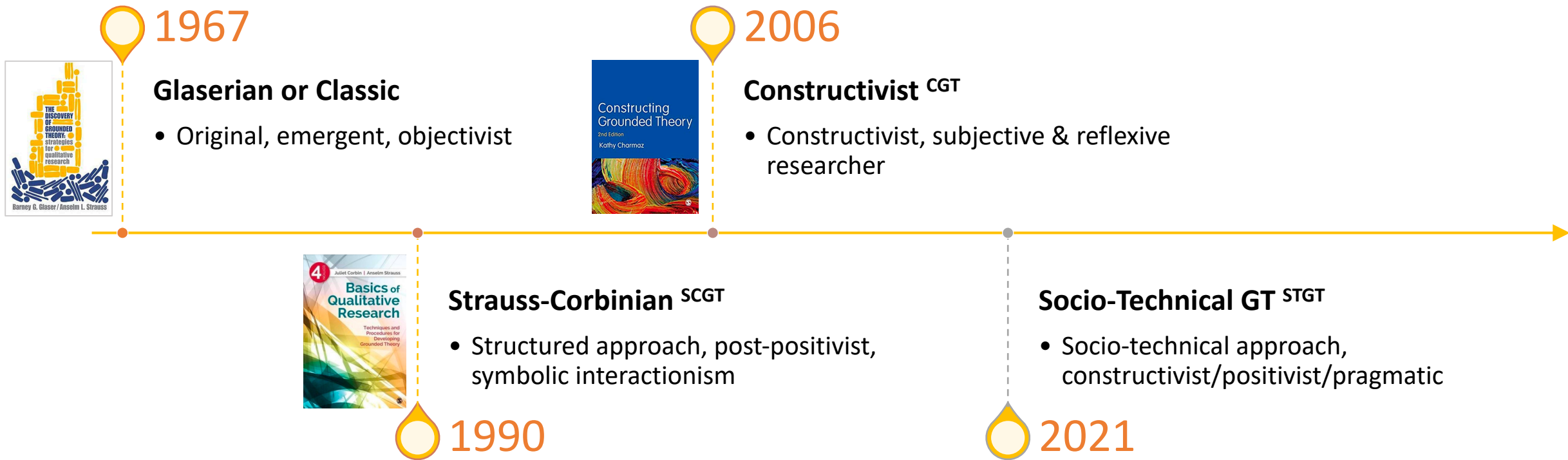
## In both cases, possible outcomes include...

- Rich insights, implications for research and practice, recommendations, actionable guidelines





# Grounded Theory – Version Control



*GT* Glaser, B. & Strauss, A. (1967). *Discovery of Grounded Theory*. Sage.

*SCGT* Strauss, A., & Corbin, J. (1990). *Basics of qualitative research*. Sage.

*CGT* Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Sage.

*STGT* Hoda, R. (2021). *Socio-technical Grounded Theory for Software Engineering*, *IEEE Transactions on Software Engineering*, 48(10), 3808-3832.

# When STGT for Qualitative Data Analysis?

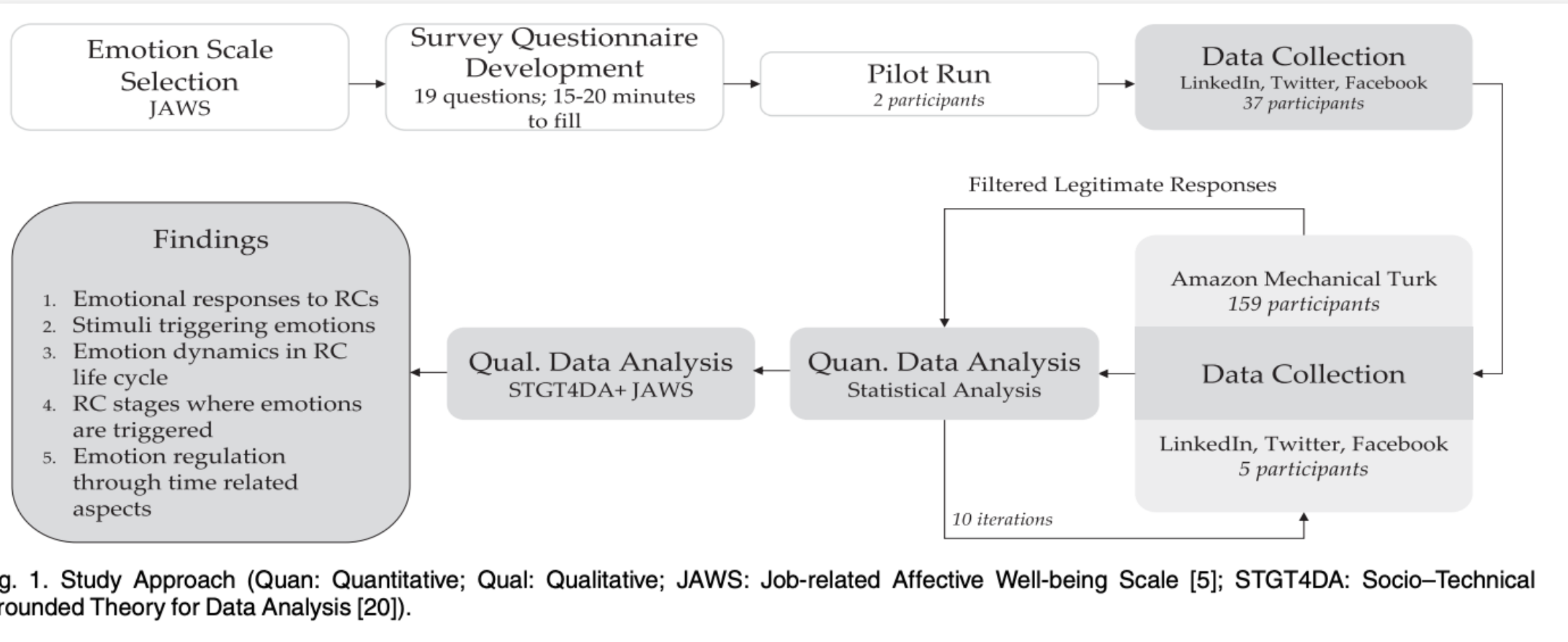
You have non-trivial amounts of qualitative data\* to make sense of!

- Unstructured, semi-structured, structured
- Elicited small-scale (e.g., interviews, surveys, focus groups, observations...)
- Public and large-scale data (e.g., social media posts, developer discussions, user app reviews, videos, talks...)

You are open to discovering new insights!

*\*see STGT paper for a discussion of ethical concerns*

# #STGT4DA – Study Design Example 1



Applying STGT for Data Analysis – Basic Stage only

Fig. 1. Study Approach (Quan: Quantitative; Qual: Qualitative; JAWS: Job-related Affective Well-being Scale [5]; STGT4DA: Socio-Technical Grounded Theory for Data Analysis [20]).

Madampe, K., Hoda, R., and Grundy, J. (2023) "The Emotional Roller Coaster of Responding to Requirements Changes in Software Engineering," in *IEEE Transactions on Software Engineering*, vol. 49, no. 3, pp. 1171-1187, doi: 10.1109/TSE.2022.3172925.

# #STGT4DA – Study Design Example 2

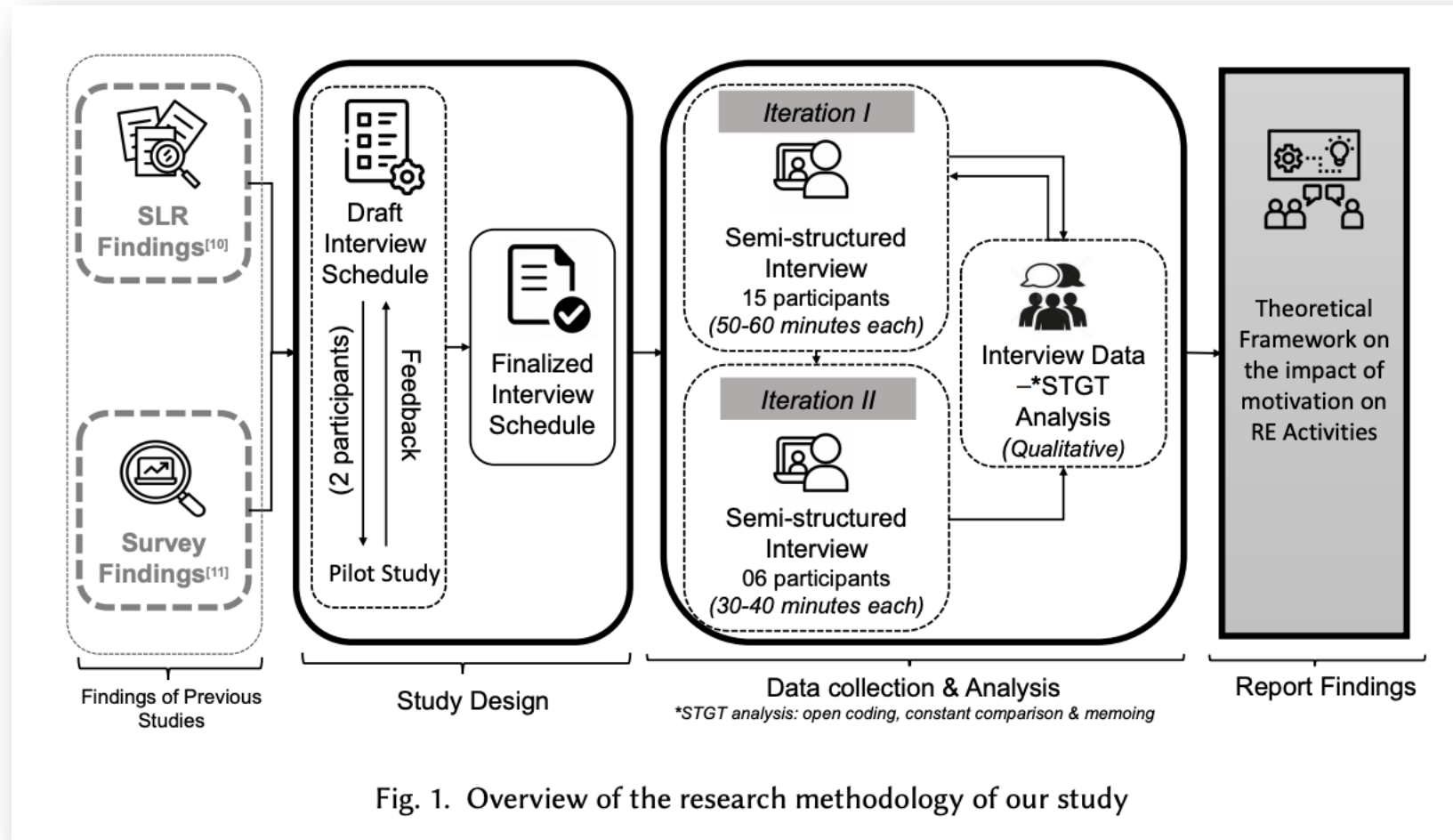


Fig. 1. Overview of the research methodology of our study

Hidellaarachchi, D., Grundy, J., Hoda, R., and Mueller, I. (2023). Understanding the Influence of Motivation on Requirements Engineering-related Activities.

Submitted to the ACM Transactions Software Engineering Methodology, 34 pages.

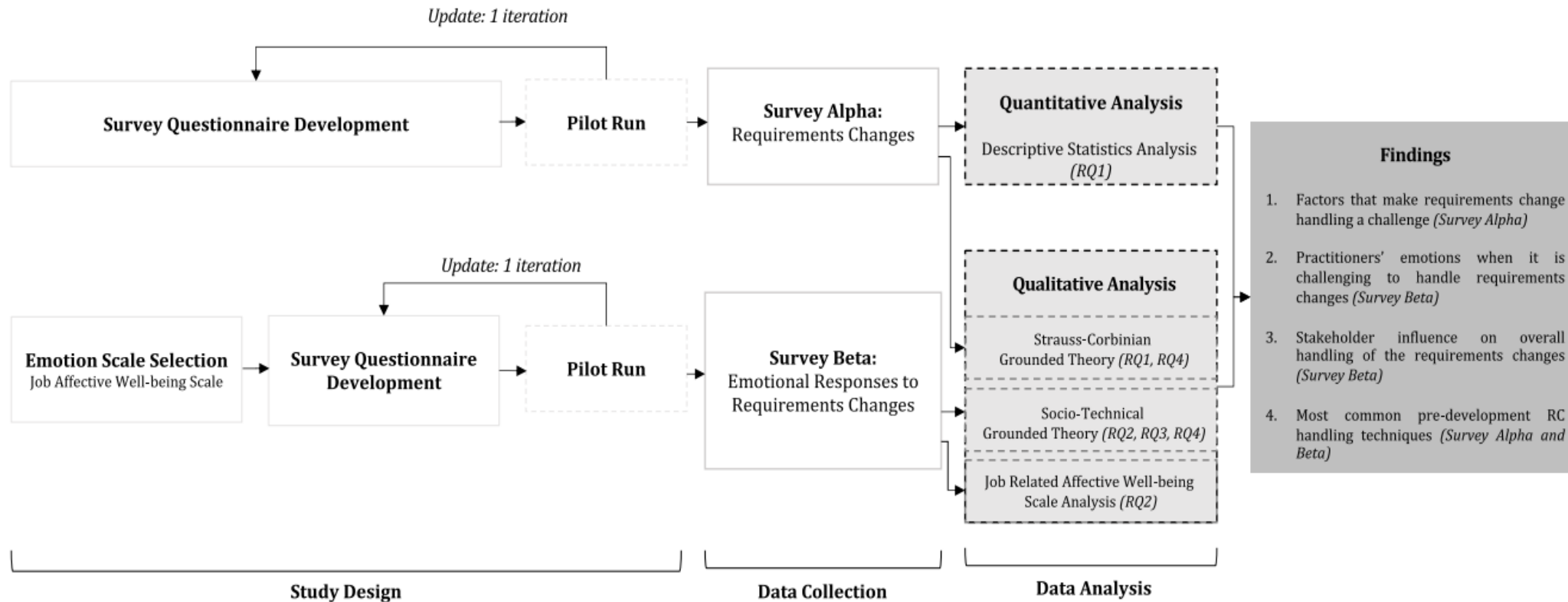
<https://arxiv.org/pdf/2304.08074.pdf>



Applying STGT for Data Analysis – Basic Stage only



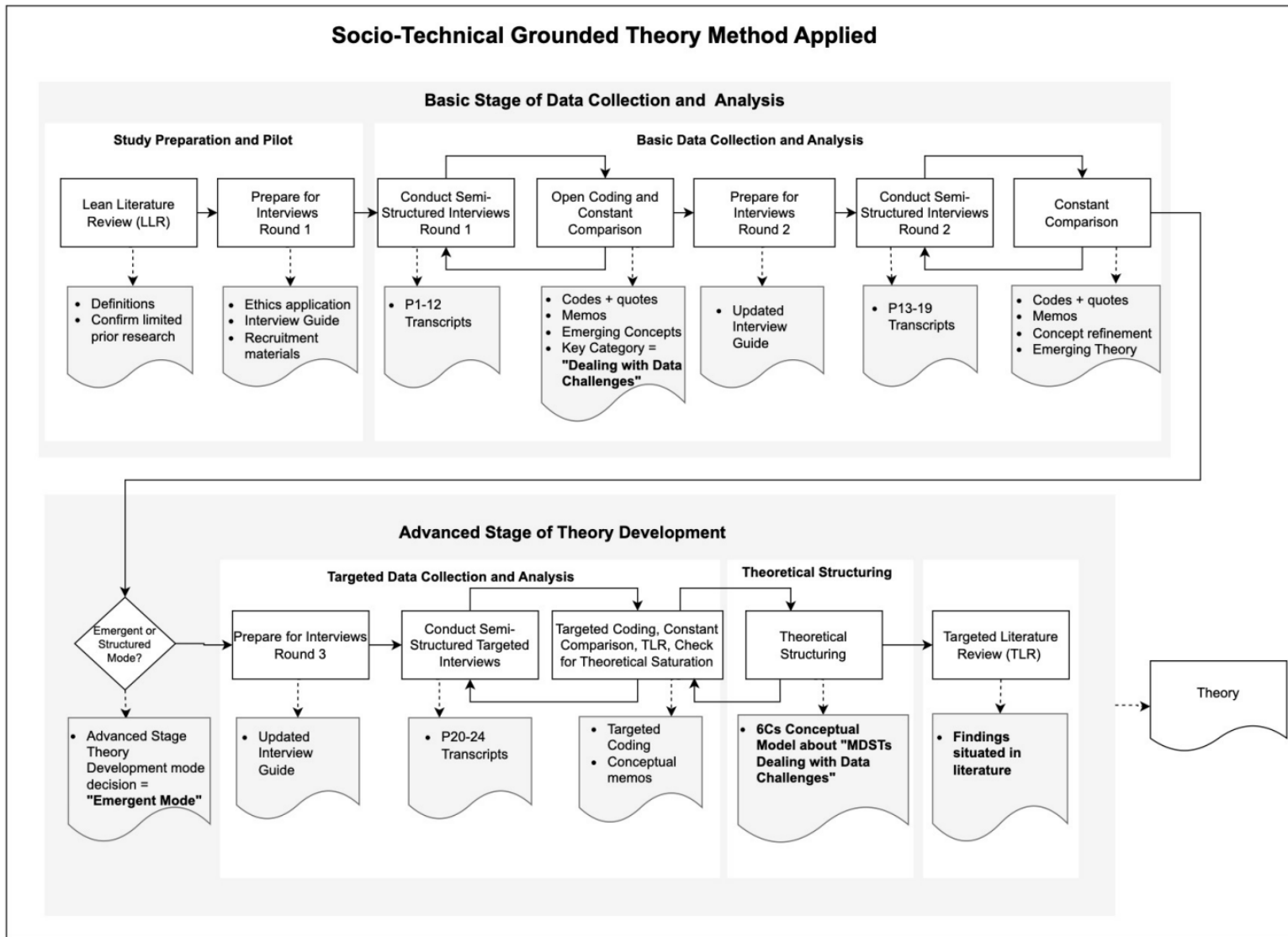
# #STGT4DA – Study Design Example 3



Applying STGT for Data Analysis – Basic Stage only

Fig. 2. Our approach (the study comprised two surveys: Alpha and beta. The data were analysed using descriptive statistics, strauss-corbinian grounded theory, socio-technical grounded theory, and job related affective well-being scale to answer the research questions).

Madampe, K., Hoda, R., & Grundy, J. (2023). A Framework for Emotion-oriented Requirements Change Handling in Agile Software Engineering. *IEEE Transactions on Software Engineering*.



Advanced Stage of Theory Development

Targeted Data Collection and Analysis

Theoretical Structuring

Prepare for Interviews Round 3

- Updated Interview Guide

Conduct Semi-Structured Targeted Interviews

- P20-24 Transcripts

Targeted Coding, Constant Comparison, TLR, Check for Theoretical Saturation

- Targeted Coding
- Conceptual memos

Theoretical Structuring

- 6Cs Conceptual Model about "MDSTs Dealing with Data Challenges"

Targeted Literature Review (TLR)

- Findings situated in literature

Theory

Graetsch, U. M., Khalajzadeh, H., Shahin, M., Hoda, R., & Grundy, J. (2022). Dealing with Data Challenges when Delivering Data-Intensive Software Solutions.

arXiv preprint arXiv:2209.14055.

Applying full STGT – Basic and Advanced Stages for Theory Development

Fig. 1. Socio-Technical Grounded Theory method applied including Basic Stage Data Collection and Analysis and with "Emergent Mode" applied during Advanced Stage Theory Development.





# A Visual Analogy – Sketch summaries

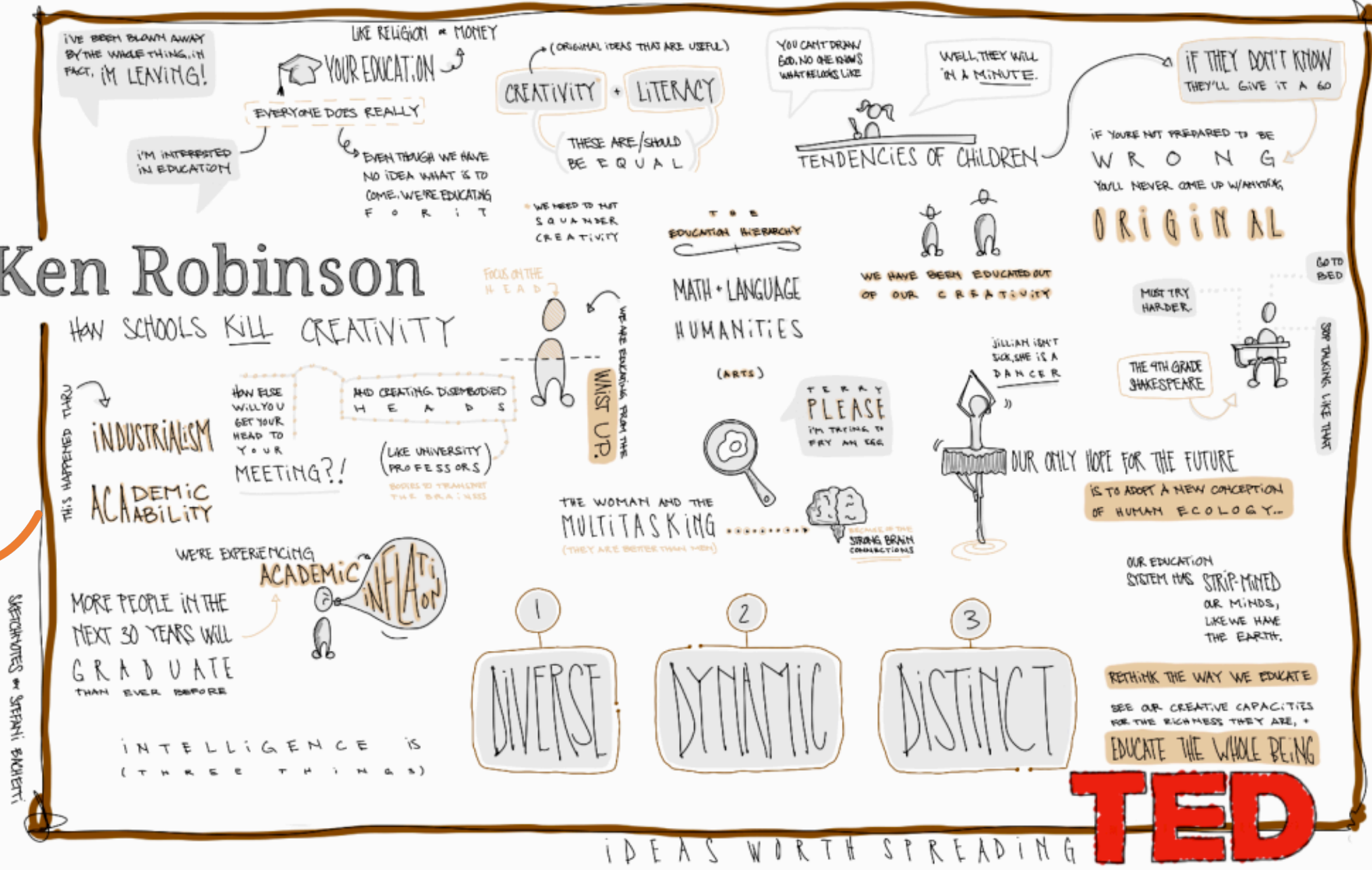


Key points from the talk (visualized)

<https://inspiringideasblog.wordpress.com/2013/04/11/illustrating-ideas-rsa-animate/>



# (Sir) Ken Robinson



Different take, key points captured

# #STGT Coding with Hashtags

Trending in News

**Christiane Amanpour**

2,359 Tweets

Technology · Trending

**OpenAI**

28.1K Tweets

#OpenAI – latest tools, papers, critique, ethical debates....

#MeToo – sexual harassment, social movement, awareness campaign ...

A/Prof Rashina Hoda  
@agileRashina

Wominjeka, welcome to Narrm, #Melbourne!

From @ProfJohnGrundy and all of us at @MonashInfotech and all other Australian universities to #icse2023 @ICSEconf

9:15 AM · May 17, 2023 · 1,518 Views

1 Quote 29 Likes

#Melbourne – place, venue  
#icse2023 – conference, research, SE community, year

# #STGT Coding with Hashtags

Creating hashtags!

There have been cases where I kind of hold back. I don't pick any of the stories, and I let the other guys pick what they want first. And then I'll do just anything which is left over.



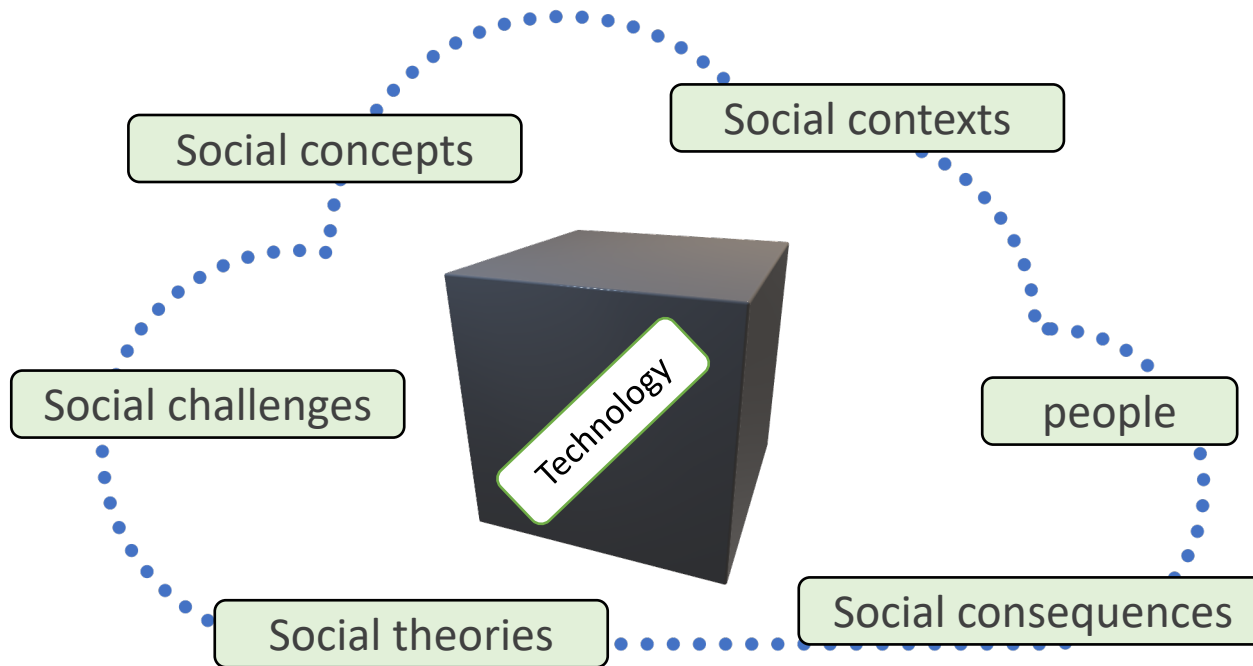
1. Individual

2. Share



# Socio-Technical Open Coding with Hashtags

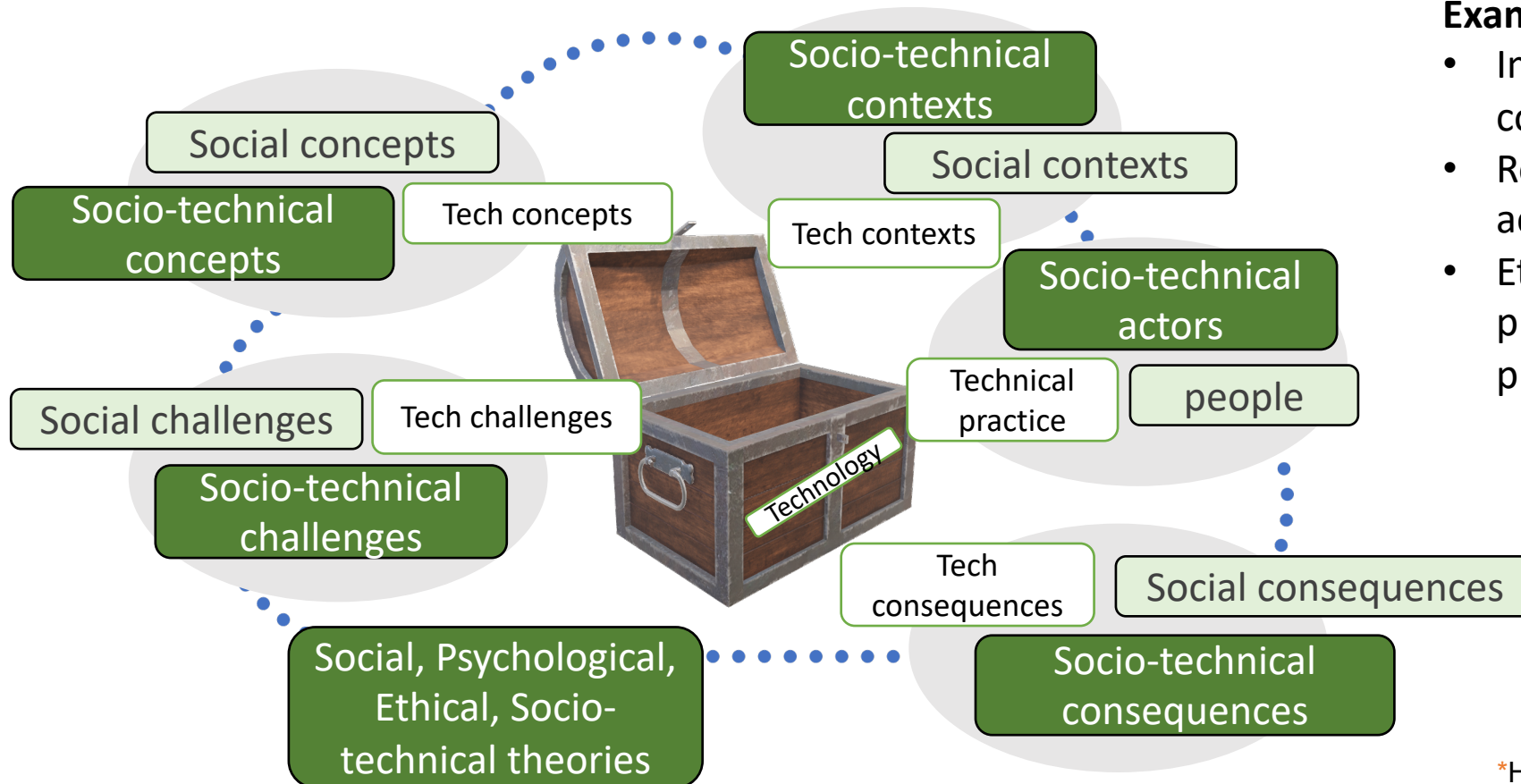
# Applying Social Science methods in SE Research - 'Tech as a Blackbox'



## Examples of Social Science topics:

- Developer's wellbeing
- Emotions of software testers
- Ethics in AI development

# Applying Socio-Technical Approaches\* for SE Research – Studying ‘Socio-Technical Ecosystems’



## Examples of Socio-Technical topics:

- Impact of developer’s wellbeing on code quality
- Role of emotions in software testing activities
- Ethical AI dilemmas faced by AI practitioners in everyday software practice

\*Hoda, R. (2021). Socio-technical Grounded Theory for Software Engineering, IEEE Transactions on Software Engineering, 48(10), 3808-3832.

# #STGT Socio-Technical Coding with Hashtags

From the sprint backlog you want to pick the XML parser task or you want to pick the GUI design task that is entirely up to you and that is the freedom that Agile gives you.



1. Individual

2. Share



# 'Homework'

On your own or with your research team...

- Take your existing qualitative data or any SE text\*
- Practice STGT coding with #hashtags
- Compare codes (or get advisor feedback) and discuss
- Finalise codes
- Keep practicing till you have a hang of it!

*\*Coding TED talks is a great starting point as they are short and well structured; select socio-technical topics to practice STGT coding; you can also practice on interviews by SE experts.*

Short Attention Break



**I ENJOY**

**KOALATATIVE RESEARCH**



# #STGT – Constant Comparison

Detecting the patterns

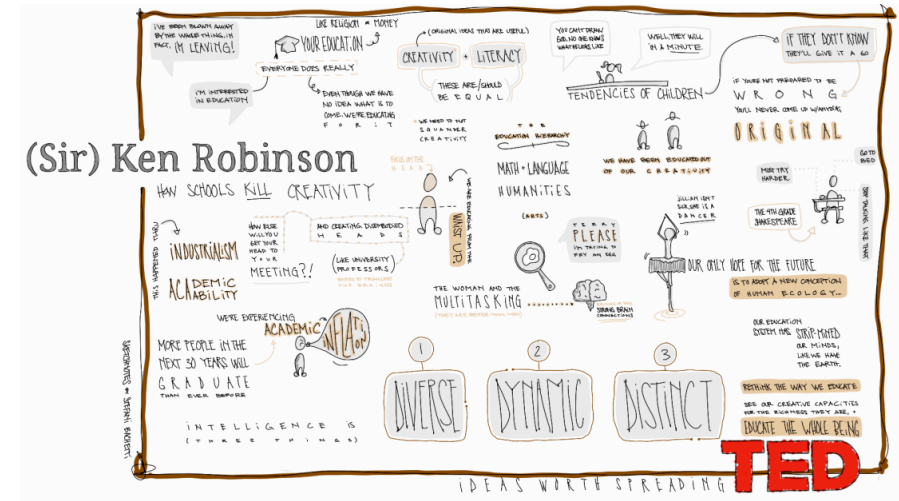


# Constant Comparison

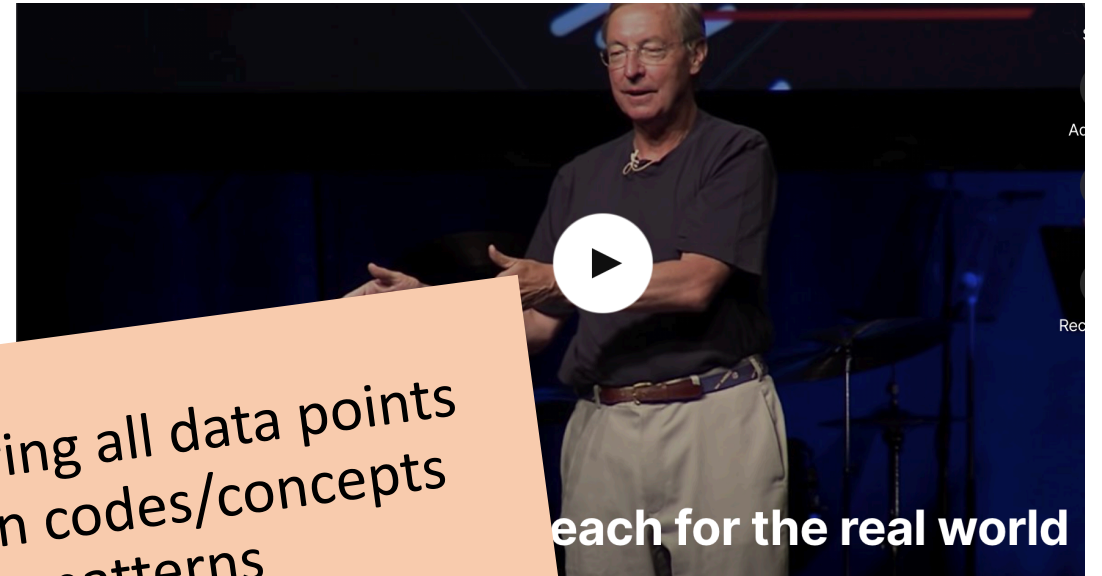
- Comparing codes (from same and different data sets/sources) to each other to find common patterns
- Grouping similar codes to generate concepts
- Grouping similar concepts to generate (sub) categories



# (Revisit) A Visual Analogy – Sketch summaries



# An Analogy – Constant Comparison



Constantly comparing all data points  
Grouping common codes/concepts  
Generating patterns





# #STGT Coding for User App Review Analysis

#unintentionalUpgrade

#scam

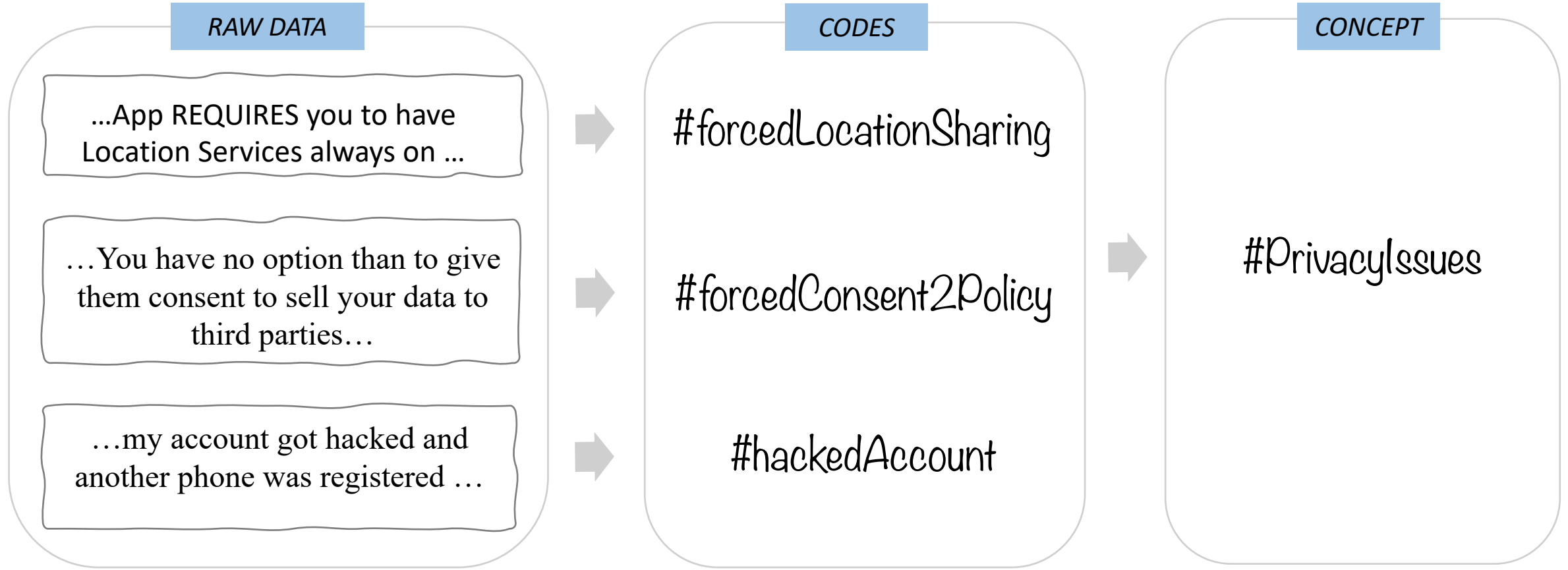
#multipleContactChannels  
#noCustomerService

“Very frustrated, pro version is scam I’ve had this app for about a month or so. I unintentionally upgraded to the pro version (\$99.00) because I had my fingerprint set with the App Store. I called the company phone number listed on my visa statement, only to hear a recorded voice. You’re then told to go to iTunes.com/bill regarding charges, then the call dies. After going to the site, you run into another dead end. AllTrails has zero customer service. I’ve yet to talk to a person from company.”

#poorReview



# #STGT Constant Comparison





# #STGT Coding – Example 1

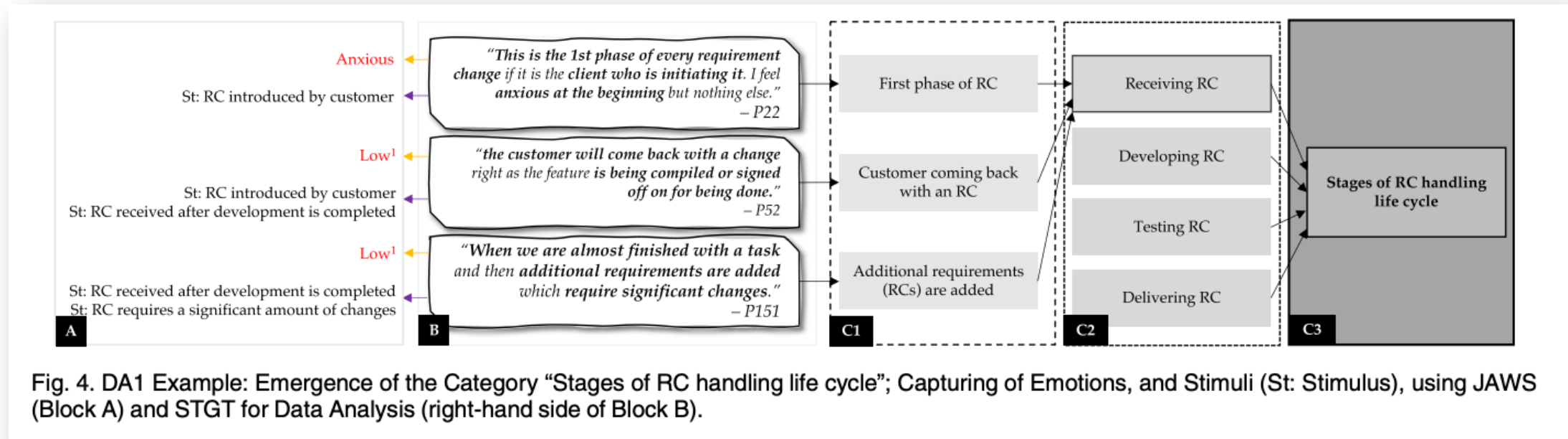
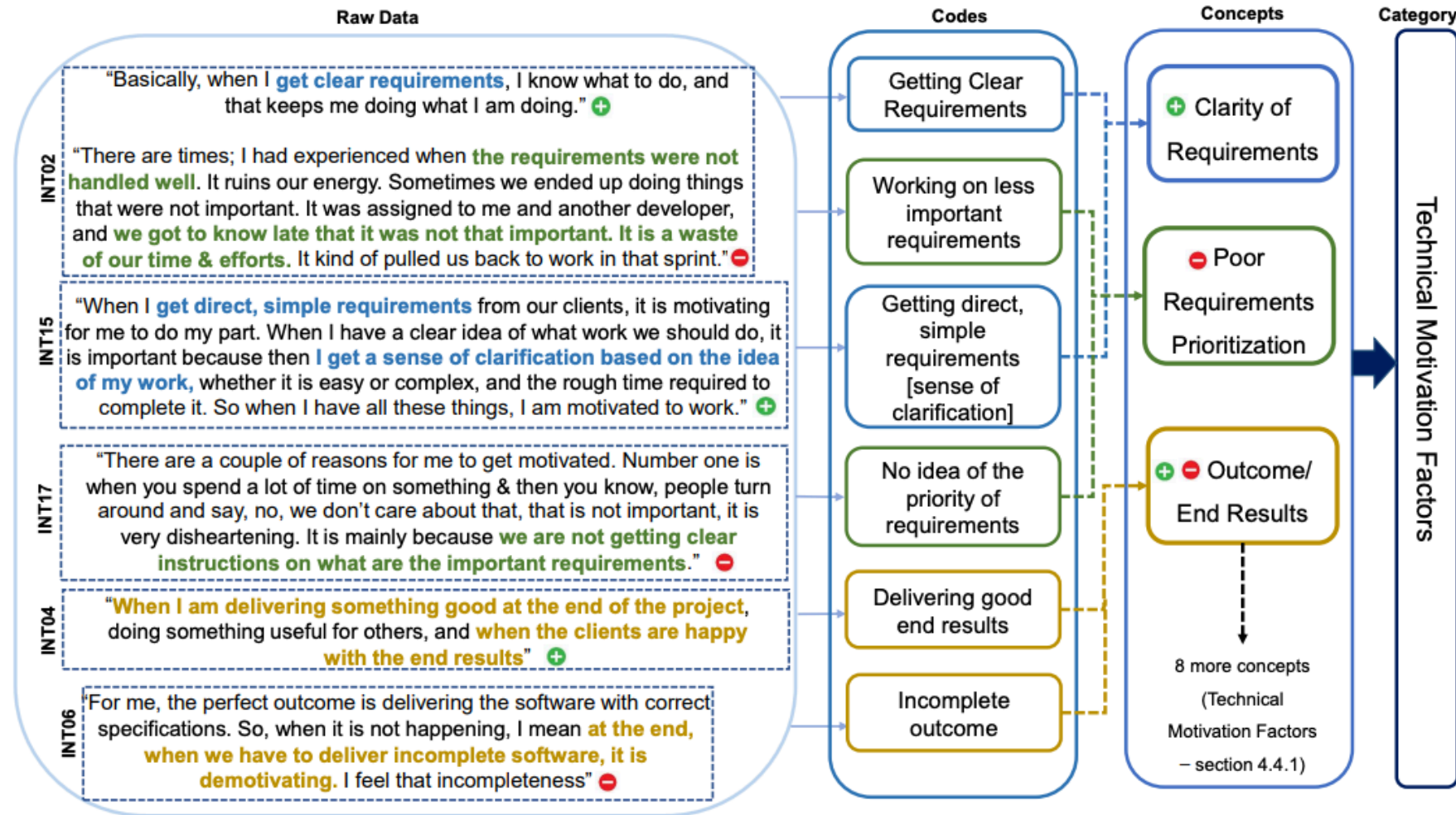


Fig. 4. DA1 Example: Emergence of the Category “Stages of RC handling life cycle”; Capturing of Emotions, and Stimuli (St: Stimulus), using JAWS (Block A) and STGT for Data Analysis (right-hand side of Block B).

Madampe, K., Hoda, R., and Grundy, J. (2023) "The Emotional Roller Coaster of Responding to Requirements Changes in Software Engineering," in *IEEE Transactions on Software Engineering*, vol. 49, no. 3, pp. 1171-1187, doi: 10.1109/TSE.2022.3172925.

# #STGT Coding – Example 2



Hidellaarachchi, D., Grundy, J., Hoda, R., and Mueller, I. (2023). Understanding the Influence of Motivation on Requirements Engineering-related Activities.

Submitted to the ACM Transactions Software Engineering Methodology, 34 pages.

<https://arxiv.org/pdf/2304.08074.pdf>

Fig. 2. Example of STGT analysis, moving from raw data to codes to concepts to category, for the category “Technical motivation factors” (The colour coding, “blue, green, yellow” indicates the three different concepts identified analysing the raw data)

# #STGT Coding – Example 3

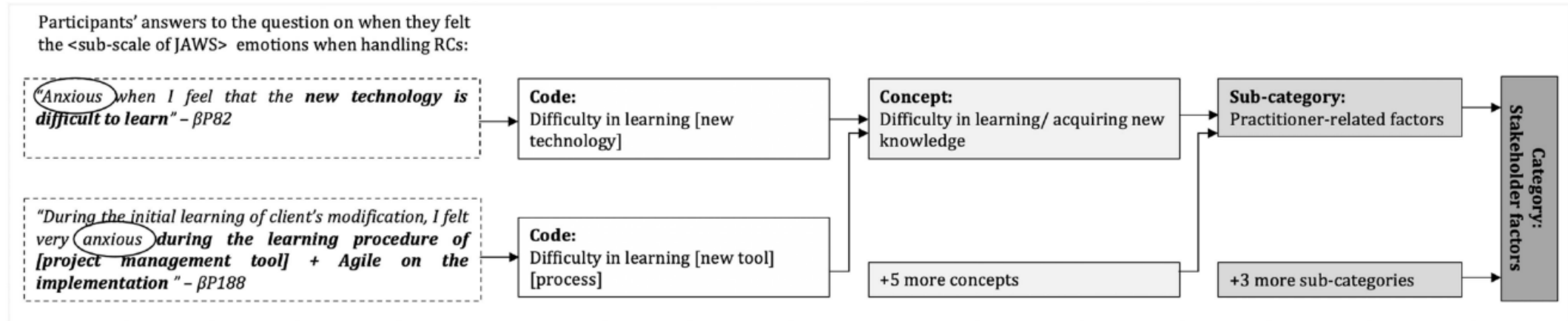


Fig. 5. An example of qualitative analysis (Oval: JAWS analysis – emotion extraction from raw data; STGT analysis: Raw data (participants' answers to open-ended questions yielded codes. Codes were then constantly compared with each other to produce concepts. Similar concepts were then grouped together to form sub-categories. And finally similar sub-categories were grouped together to generate the categories. Refer to the appendices for more STGT analysis examples).

Madampe, K., Hoda, R., & Grundy, J. (2023). A Framework for Emotion-oriented Requirements Change Handling in Agile Software Engineering. *IEEE Transactions on Software Engineering*.

# #STGT Coding – Example 4



Graetsch, U. M., Khalajzadeh, H., Shahin, M., Hoda, R., & Grundy, J. (2022). Dealing with Data Challenges when Delivering Data-Intensive Software Solutions. arXiv preprint arXiv:2209.14055.

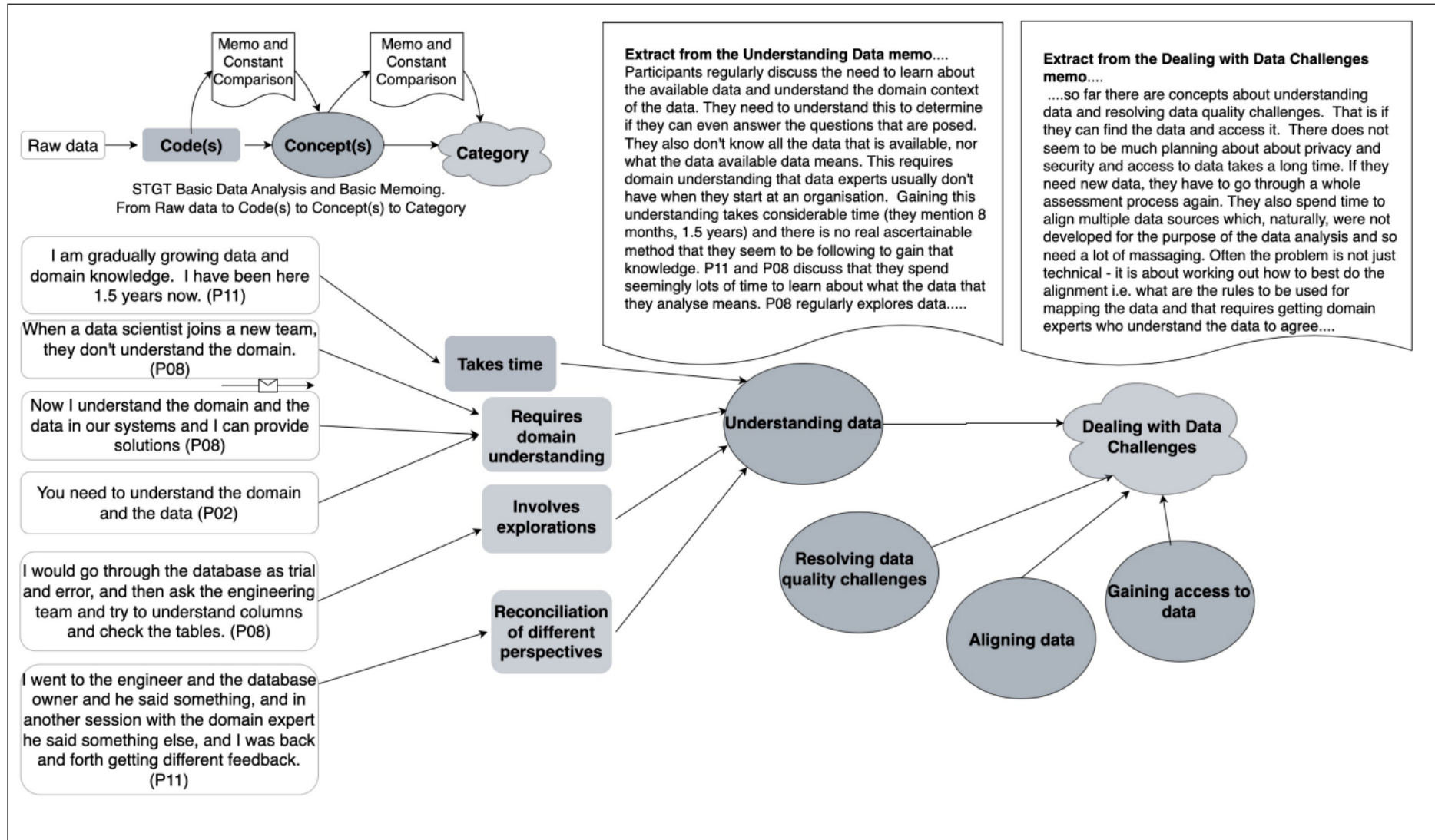


Fig. 2. Example of the application of STGT Basic Stage Data Analysis to develop the Understanding Data Concept and Dealing with Data Challenges Category from coded raw data using basic memos.”





# #STGT – Memoing

Unleashing your superpower!

# #STGT - Why Memoing?

- Supports Coding (development of codes, concepts, categories)
- Supports development of relationships
- Powers Theoretical Sampling (what to ask next, who to ask next)
- Reflexivity

# #STGT Memoing – Example 1



## **Extract from the Understanding Data memo....**

Participants regularly discuss the need to learn about the available data and understand the domain context of the data. They need to understand this to determine if they can even answer the questions that are posed. They also don't know all the data that is available, nor what the data available data means. This requires domain understanding that data experts usually don't have when they start at an organisation. Gaining this understanding takes considerable time (they mention 8 months, 1.5 years) and there is no real ascertainable method that they seem to be following to gain that knowledge. P11 and P08 discuss that they spend seemingly lots of time to learn about what the data that they analyse means. P08 regularly explores data.....

## **Extract from the Dealing with Data Challenges memo....**

....so far there are concepts about understanding data and resolving data quality challenges. That is if they can find the data and access it. There does not seem to be much planning about about privacy and security and access to data takes a long time. If they need new data, they have to go through a whole assessment process again. They also spend time to align multiple data sources which, naturally, were not developed for the purpose of the data analysis and so need a lot of massaging. Often the problem is not just technical - it is about working out how to best do the alignment i.e. what are the rules to be used for mapping the data and that requires getting domain experts who understand the data to agree....

Graetsch, U. M., Khalajzadeh, H., Shahin, M., Hoda, R., & Grundy, J. (2022). Dealing with Data Challenges when Delivering Data-Intensive Software Solutions. arXiv preprint arXiv:2209.14055.

# #STGT Memoing – Example 2



**Memo on “Use of advanced tools & techniques as a Motivation Factor”** of the 21 participants, 17 mentioned that *use of various technologies* motivate them to perform RE-related activities. They have referred to it as “*use of various tools*” (INT01), “*customized tools*” (INT02), “*use of advanced technologies*” (INT06), or “*tech-advanced applications for RE*” (INT21) act as a motivation factor for them to involve in RE-activities. These can be considered positive attributes that can influence practitioners’ motivation. It is interesting to know how these attributes impact RE-related activities such as “helpful in advancing requirements” (INT21), “ability to embed a variety of functions” (INT09) and “do customization according to requirements” (INT02), and “enhance the system design in line with requirements” (INT09) mentioned by the practitioners. However, one practitioner (INT16) highlighted that technology should have a threshold; if it goes overboard, it may impact negatively as well. Various other aspects, such as practitioners’ individual interests, the project domain, and practitioners’ knowledge, play a vital role in considering the “use of various technologies” as a motivation factor to perform RE-related activities. Hence, it is important to understand how various technologies can be used for better RE with more context-specified future studies.

Hidellaarachchi, D., Grundy, J., Hoda, R., and Mueller, I. (2023). Understanding the Influence of Motivation on Requirements Engineering-related Activities.

Submitted to the ACM Transactions Software Engineering Methodology, 34 pages.

<https://arxiv.org/pdf/2304.08074.pdf>

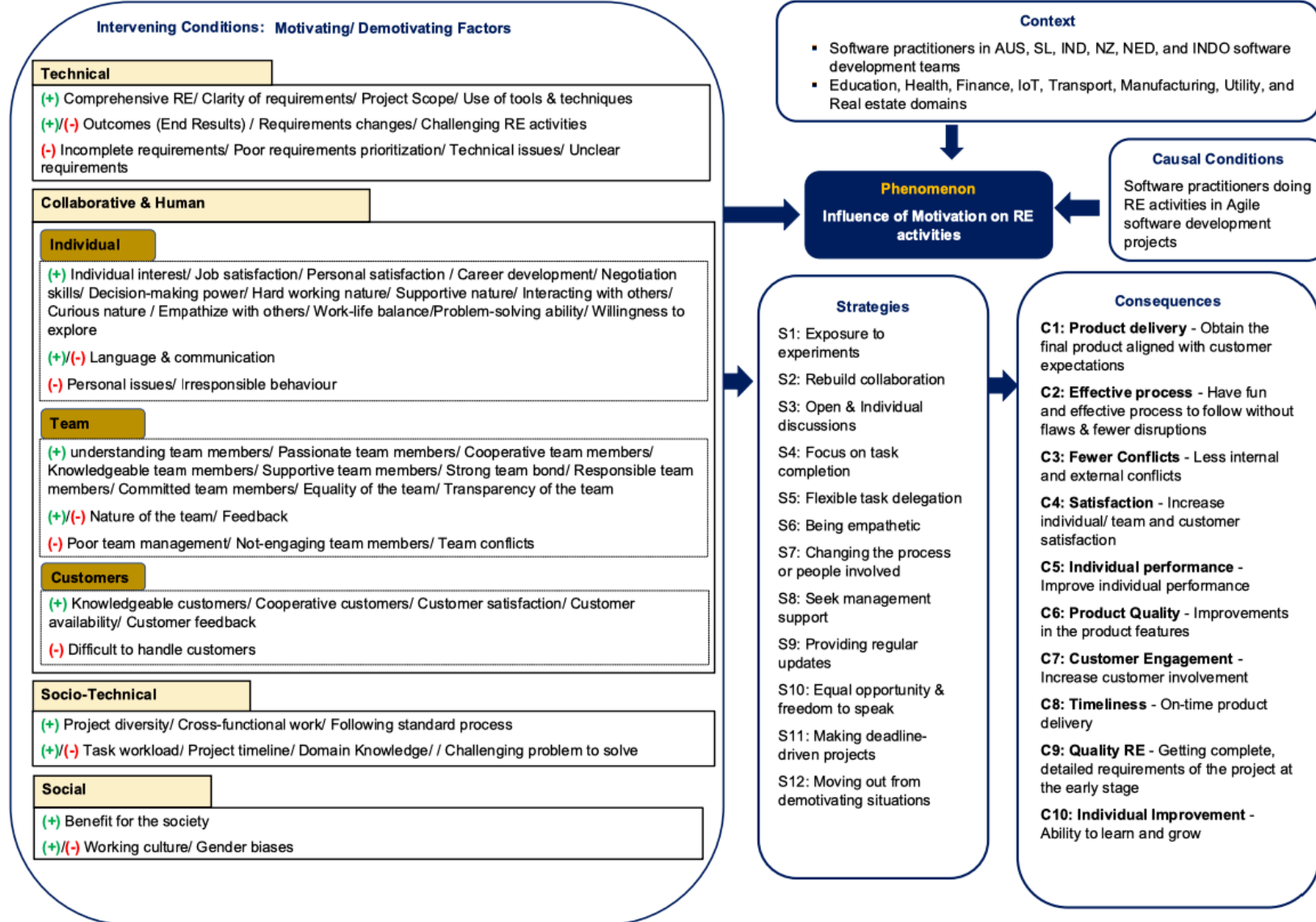




# #STGT4DA Outcomes – Example 1




Fig. 3. The impact of motivation on RE-related activities, derived using STGT [13] and structured using Strauss & Corbin's Coding Paradigm [28]



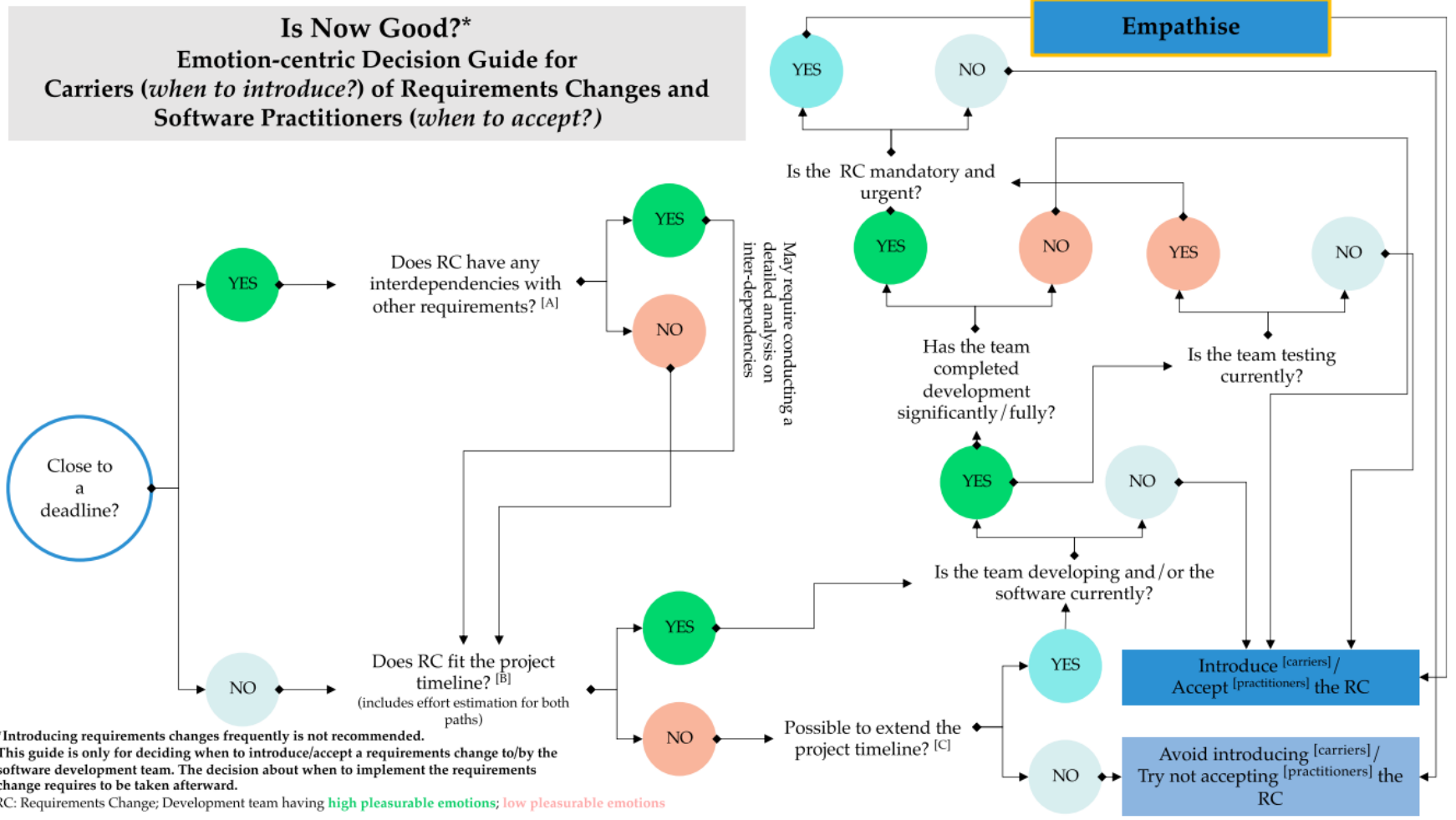
Hidellaarachchi, D., Grundy, J., Hoda, R., and Mueller, I. (2023). Understanding the Influence of Motivation on Requirements Engineering-related Activities.

Submitted to the ACM Transactions Software Engineering Methodology, 34 pages.

<https://arxiv.org/pdf/2304.08074.pdf>

  
Preliminary theoretical framework resulting from STGT 4 Data Analysis application

# #STGT4DA Outcomes – Example 2



Madampe, K., Hoda, R., and Grundy, J. (2023) "The Emotional Roller Coaster of Responding to Requirements Changes in Software Engineering," in *IEEE Transactions on Software Engineering*, vol. 49, no. 3, pp. 1171-1187, doi: 10.1109/TSE.2022.3172925.



Actionable guidelines resulting from STGT 4 Data Analysis application

Fig. 8. Dual-purpose Guide: Emotion-centric Decision Guide for Carriers of Requirements Changes and Practitioners.

# #STGT4DA Outcomes – Example 3

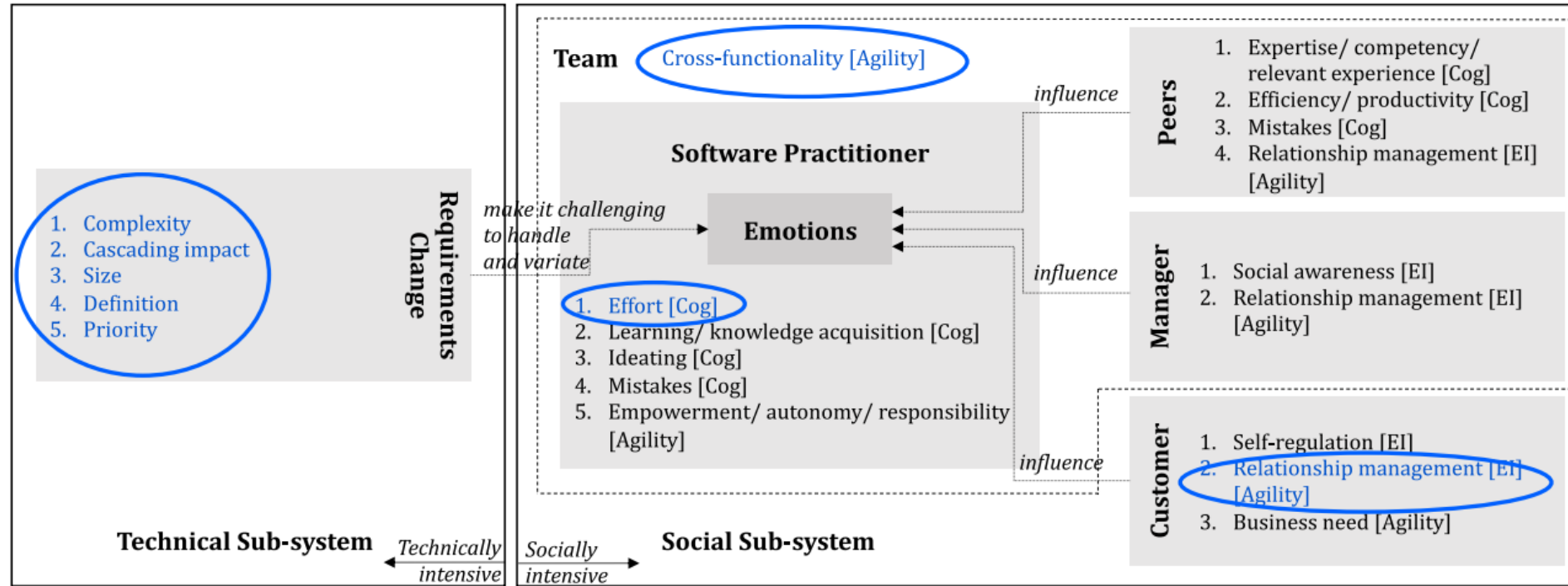


Fig. 7. Relationship between the challenging factors, stakeholders, and emotions (potential categories – Cog: Cognitive intelligence; EI: Emotional intelligence | blue text (circled): Challenging factors; black text: Stakeholder factors).



Preliminary theoretical model resulting from STGT 4 Data Analysis application

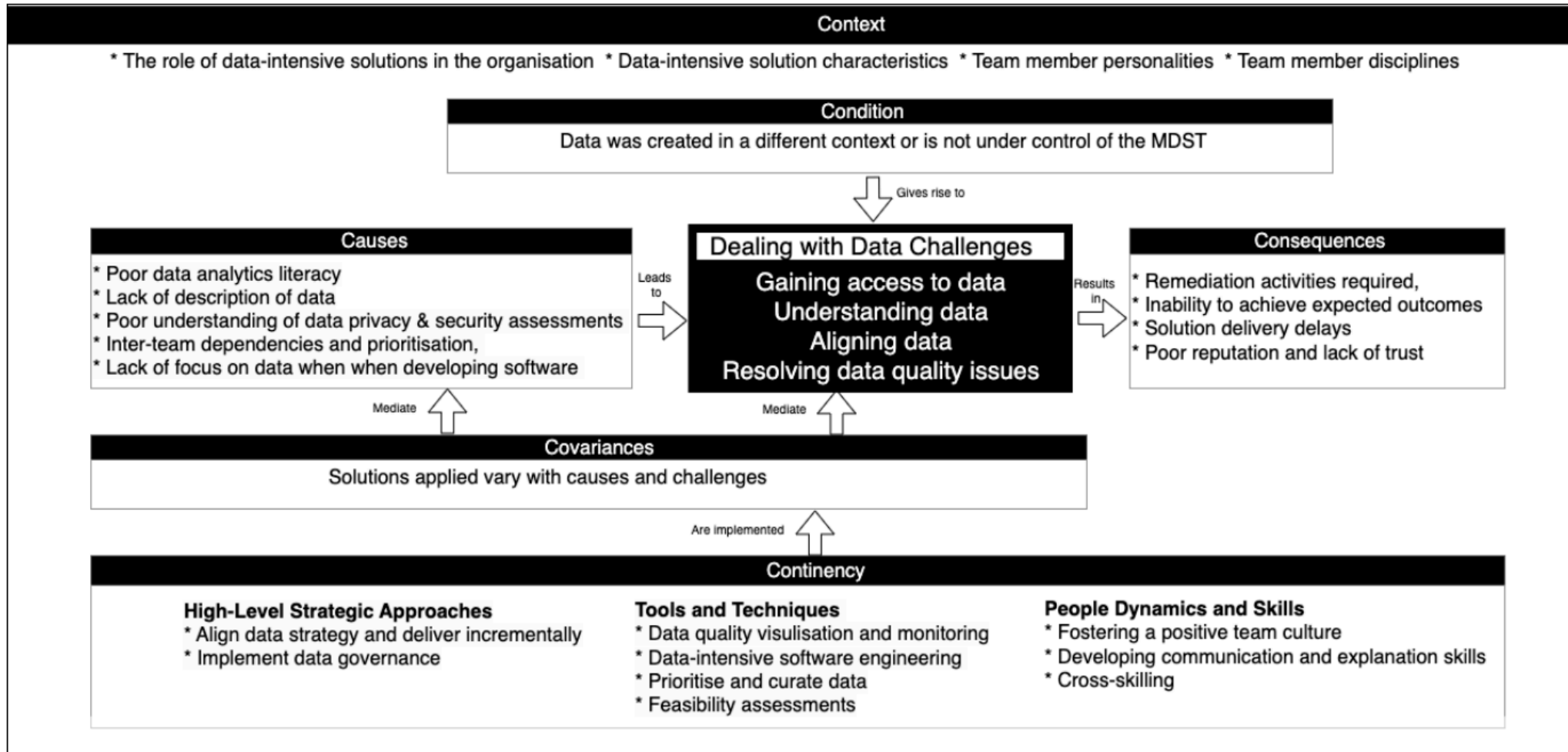
Madampe, K., Hoda, R., & Grundy, J. (2023). A Framework for Emotion-oriented Requirements Change Handling in Agile Software Engineering. *IEEE Transactions on Software Engineering*.



# #FullSTGT Outcomes – Example 4



Graetsch, U. M., Khalajzadeh, H., Shahin, M., Hoda, R., & Grundy, J. (2022). Dealing with Data Challenges when Delivering Data-Intensive Software Solutions. arXiv preprint arXiv:2209.14055.



Theory resulting from Full STGT Study application

Fig. 3. Theory of MDSTs dealing with data challenges when delivering DI software solutions structured and visualised using the 6Cs model [21].

# Telling the Stories



# Presenting #STGT Findings

When using STGT for Data Analysis (Basic Stage)

- Claim emerging or preliminary theoretical frameworks/model

When using Full STGT Method (Basic and Advanced Stages)

- Claim theory or theoretical frameworks/models (as the case may be)

General recommendations:

- Treat methodology as a `first class' section in your paper
- Share examples of coding, memoing...
- Share evidence while managing for confidentiality (e.g., sample quotes, photos, posts, artefacts...)
- Share insights, recommendations, actionable guidelines

See more presentation guidelines in the #STGT Guide paper

# Getting Started with #STGT – Guide & Exemplars

## STGT Guide

Hoda, R. (2022). Socio-technical Grounded Theory for Software Engineering, *IEEE Transactions on Software Engineering*, 48(10), 3808-3832 (early access Aug 2021). <https://ieeexplore.ieee.org/document/9520216>

## STGT for Data Analysis (STGT4DA) Exemplars

- Madampe, K., Hoda, R., and Grundy, J. (2023) "The Emotional Roller Coaster of Responding to Requirements Changes in Software Engineering," in *IEEE Transactions on Software Engineering*, vol. 49, no. 3, pp. 1171-1187, doi: 10.1109/TSE.2022.3172925. <https://ieeexplore.ieee.org/document/9769966>
- Madampe, K., Hoda, R., & Grundy, J. (2023). A Framework for Emotion-oriented Requirements Change Handling in Agile Software Engineering. *IEEE Transactions on Software Engineering*. <https://ieeexplore.ieee.org/document/10061282>
- Hidellaarachchi, D., Grundy, J., Hoda, R., and Mueller, I. (2023). Understanding the Influence of Motivation on Requirements Engineering-related Activities. Submitted to the *ACM Transactions Software Engineering Methodology*, 34 pages. <https://arxiv.org/pdf/2304.08074.pdf>

## Full STGT Study Exemplar

- Graetsch, U. M., Khalajzadeh, H., Shahin, M., Hoda, R., & Grundy, J. (2022). Dealing with Data Challenges when Delivering Data-Intensive Software Solutions. <https://arxiv.org/pdf/2209.14055.pdf>



# Questions & Discussion



# Wrap Up



Analyse this:



There have been cases where I kind of hold back. I don't pick any of the stories, and I let the other guys pick what they want first. And then I'll do just anything which is left over.



The statement you provided suggests a tendency to hold back and not actively assert oneself in certain situations, specifically when it comes to choosing stories or tasks. Let's break down the analysis:



1. Holding back: The individual admits to holding back, indicating a lack of confidence, or a tendency to prioritize others' needs over their own.
2. Not picking stories: The person states that they refrain from selecting stories, which might indicate a preference for accommodating others' interests or a fear of making choices that are less important.
3. Letting others choose first: The person allows others to choose first, indicating a willingness to prioritize the desires of others. This behavior could be seen as cooperative or selfless nature, but it could also reflect a fear of making choices or a lack of assertiveness.
4. Doing what is left over: Once others have made their choices, the person settles for whatever is remaining. This suggests a tendency to adapt to circumstances rather than actively pursuing what they truly want.



Open code this in brief:



There have been cases where I kind of hold back. I don't pick any of the stories, and I let the other guys pick what they want first. And then I'll do just anything which is left over.



The individual described occasionally holds back, refrains from choosing stories, and allows others to pick first. They then settle for whatever options are remaining.



**'Coding' fun with ChatGPT**

Overall, the analysis suggests that the individual described may struggle with assertiveness, confidence, or decision-making. They may prioritize the needs and desires of others over their own, leading to a tendency to hold back and settle for what is left. Understanding the underlying reasons behind these behaviors can help address any potential concerns and work towards asserting oneself and making choices that align with personal preferences.

Regenerate response

# Five Reasons to try STGT for Qual Data Analysis

1. Customised for socio-technical topics and researchers **#SERelevant**
2. One STGT method to follow **#VersionControl**
3. Delayed decision making about theory development, after some experience **#Room2Advance**
4. Leverages modern data types and sources **#ModernData**
5. Encourages inter-disciplinary and mixed (qual, quan) studies of socio-technical phenomena **#ExpandScope**



# #STGT – Topics Ideas

- Ethics in AI, ML algorithm design, software design...
- Future of SE/AI, work, society, families, planet...
- Human perspectives (e.g., developer, user) on ethics, AI, bias, burnout, future of ...
- Human aspects (empathy, gender, age, values) in software teams, process, design, ...
- Social aspects (collaboration, coordination, diversity, formation) in software teams, ...
- Socio-technical aspects in SE practices, e.g. code reviews, backlog refinement, estimation, ...

# #STGT – Some more Possible Topics :)

- Designing inclusive user experience, human-centered AI design, understanding human-in-the-loop...
- Role of social media in political campaigns, crisis management, social work...
- Studying virtual collaboration in online education, massively multiplayer online games, professional training...
- Impact of digitalization and technology in banking, finance, retail, medicine, sociology, psychology, aged care, mental health, disability management...
- Meta SE research –ethics in research, nature of reality (ontology), role of the researcher (epistemology), research paradigm bias in reviewing, reimagining research for contemporary times...

# Quick Feedback

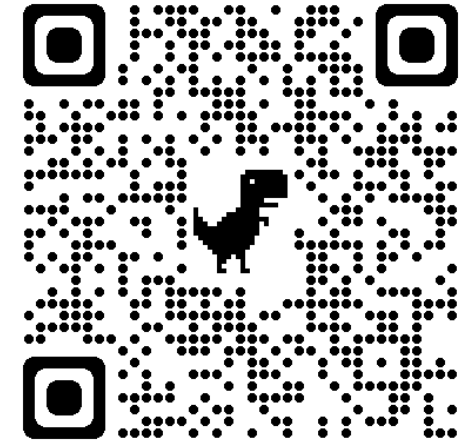


# #STGT – Follow Up

- STGT Guide (TSE, 2022)
- Videos
- Upcoming Book

Using Ideas from this Technical Briefing?

Please cite: Hoda, R. (2021). Socio-technical Grounded Theory for Software Engineering, IEEE Transactions on Software Engineering, 48(10), 3808-3832.



[www.rashina.com/stgt](http://www.rashina.com/stgt)

 @agileRashina



We're hiring!

[Tinyurl.com/yw2tx63u](https://tinyurl.com/yw2tx63u)

