Coding & Qualitative Analysis

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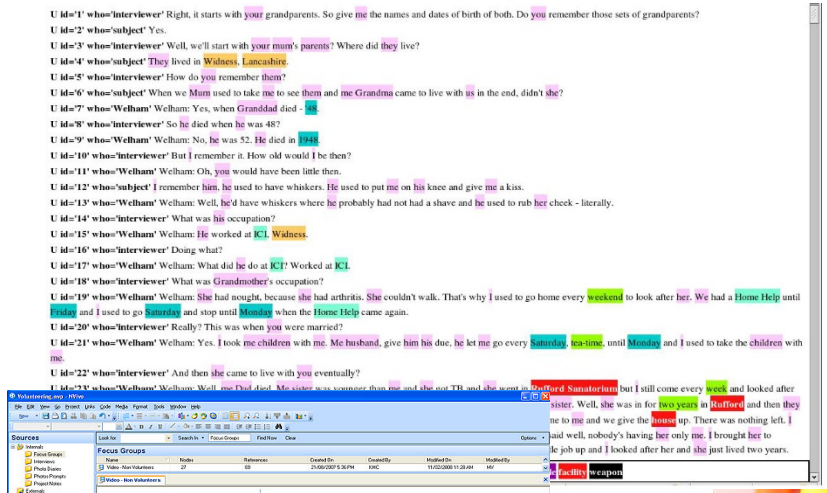
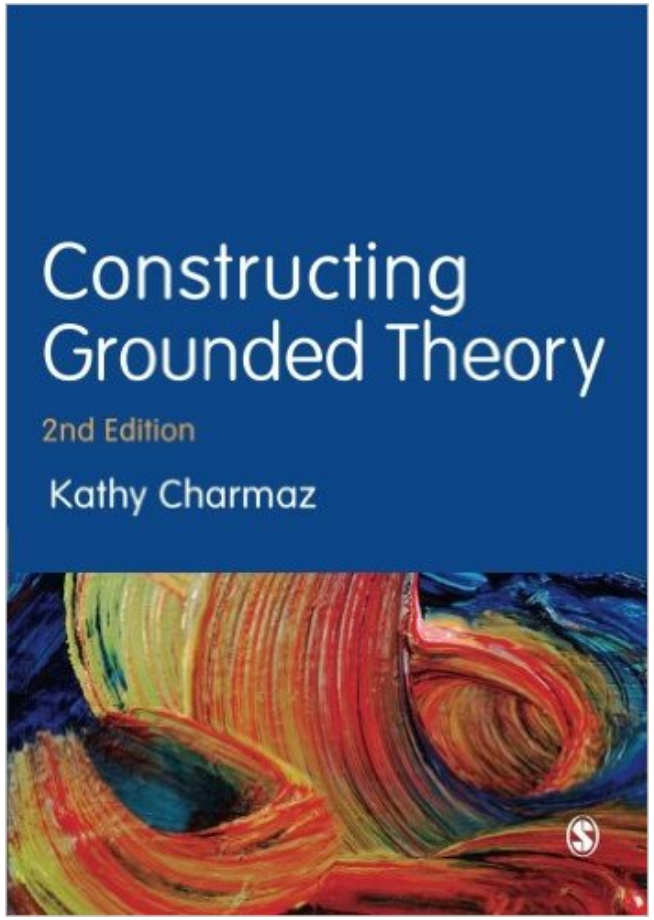
Today

- General concept of coding
- How codes are the “building blocks” of qualitative analysis
- Moving from open coding to focused coding, from codes to categories, from categories to theory
  - A worked example

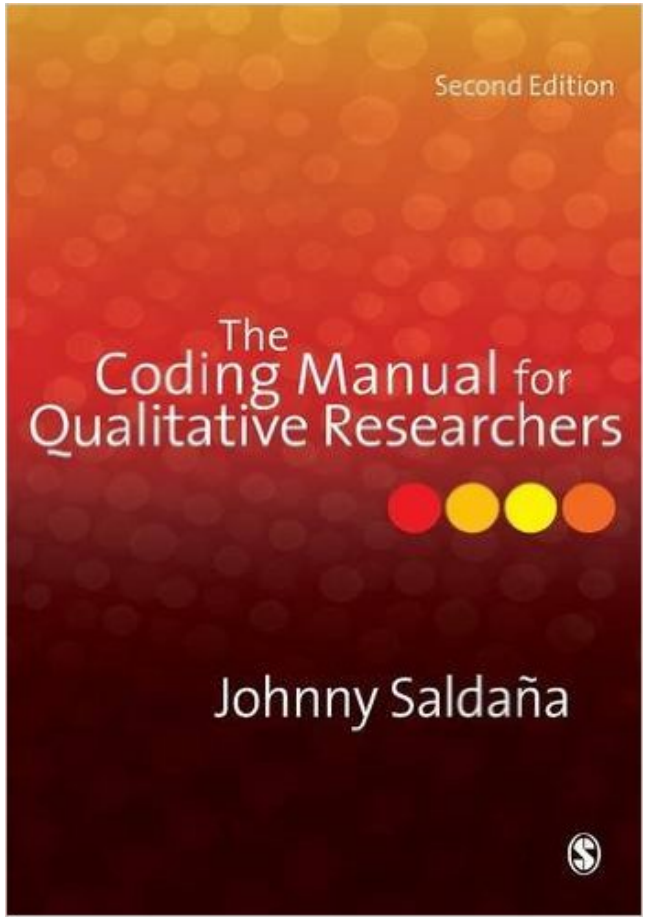


What is coding?



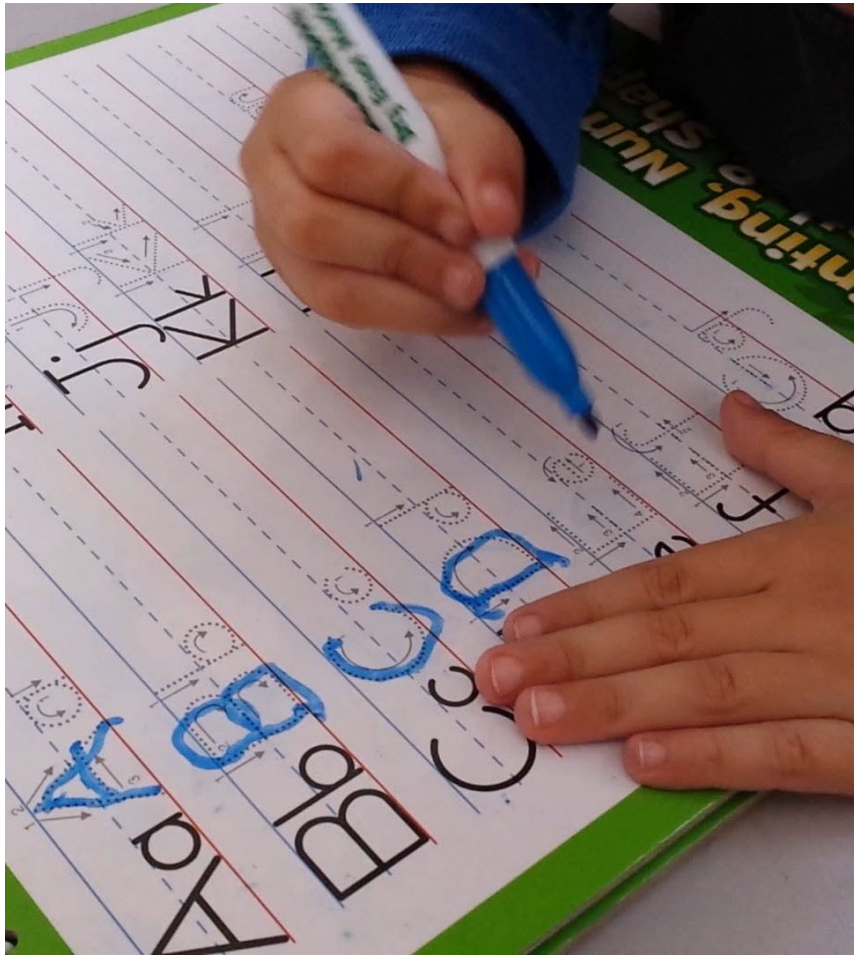
"Naming segments of data with a label that simultaneously categorizes, summarizes, and accounts for each piece of data" (p.43)

What is coding?

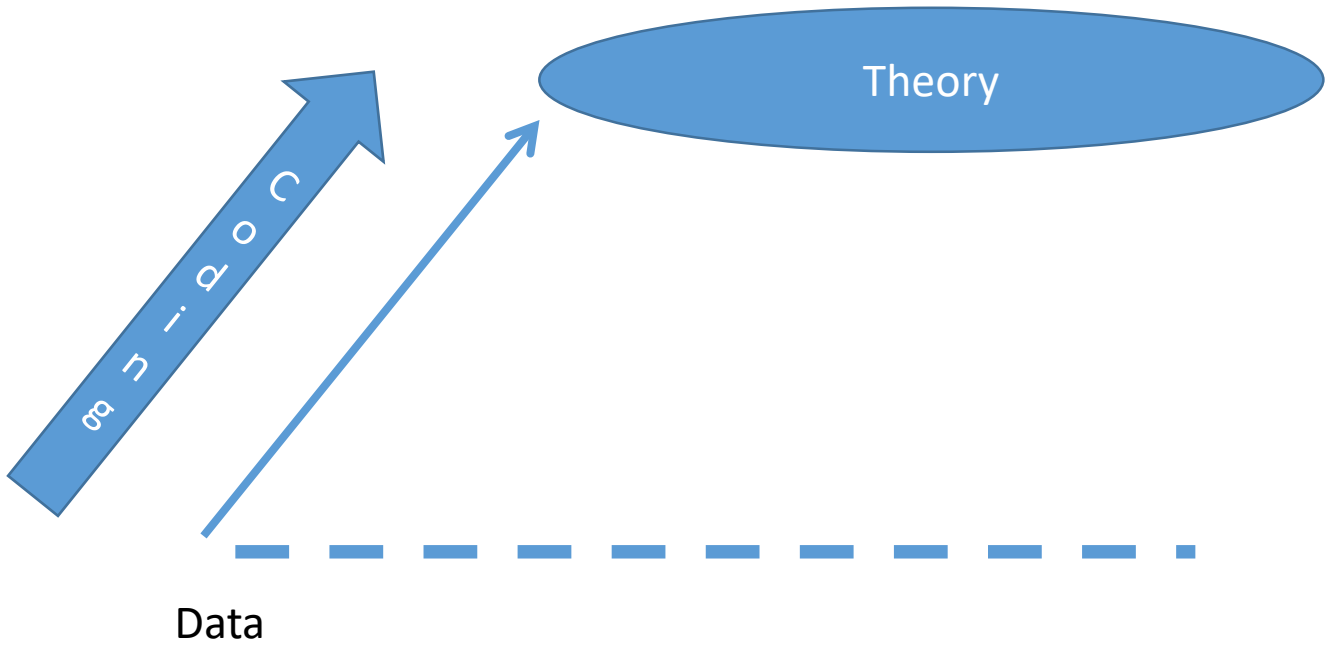


"A word or short phrase that symbolically assigns a summative, salient, essence-capturing and evocative attribute for a portion of language or visual data" (p.3)

Coding is a basic tool in your analysis kit



How does coding help you build theory?



~~The Rules~~ Suggestions for Coding

1. One passage can represent many ideas.
2. A code can capture a word, or a line, or a whole paragraph
3. Codes that don’t fit into categories are just as important as those that do fit.
4. Goal is to describe, categorize, synthesize, the data.

What type of ideas might you code?

- A code describes what you see in the data:
  - Participant's view
  - Link to theory
  - Link to other data
  - Questions assumptions
  - Highlights language

Example: Personal statement for residency match to OBGYN

Being in a home with five women instilled in me a deep sense of empathy and listening skills that would later be necessary for me in a field where the presenting symptoms and problems would never be personally experienced. From an early age I was exposed to a full range of women's health issues which now allows me to discuss these issues in an open and comfortable manner in a variety of clinical settings. Having a sister with Down syndrome gave me many opportunities to educate others from a young age, which has since developed into a strong desire to be in an environment where education and teaching are prevalent. Coming from a large family, there are differing passionate views of everything from religion and politics down to how to cook a turkey, which conditioned me to be a team player, overcoming differences and obstacles to reach a common goal. Ultimately, growing up in this environment helped me develop the interpersonal skills and characteristics necessary to succeed as a physician.

Source: http://www.mcw.edu/FileLibrary/Groups/AcademicAffairs/stuaffairs/PersonalStatementSample2.pdf

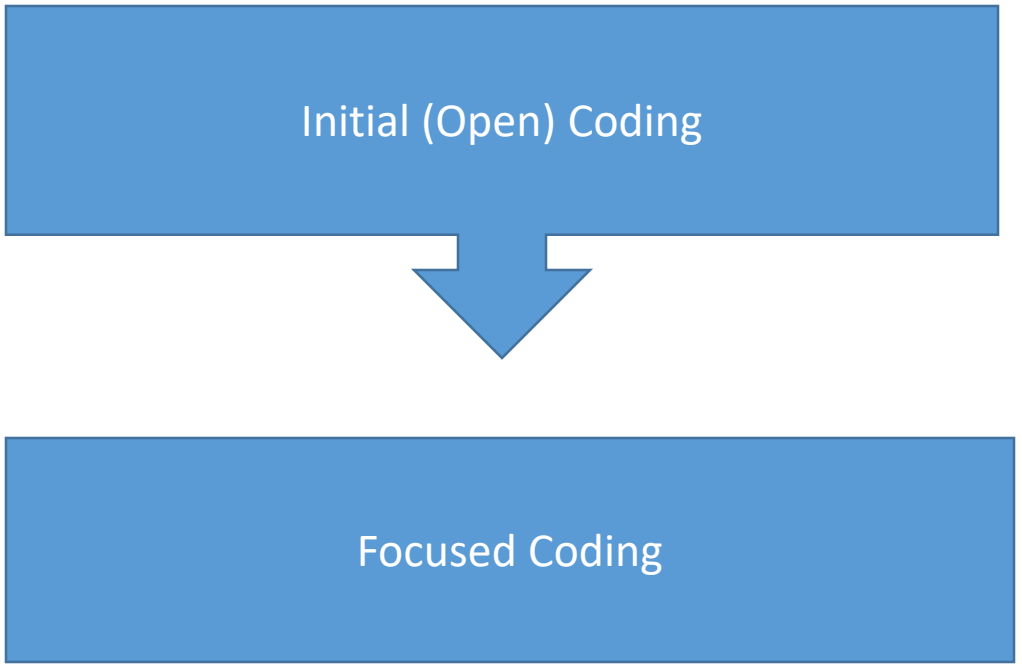
Some potential questions or reactions

- What research question are we trying to answer?
  - What's the point of coding this? What's our analytic objective?

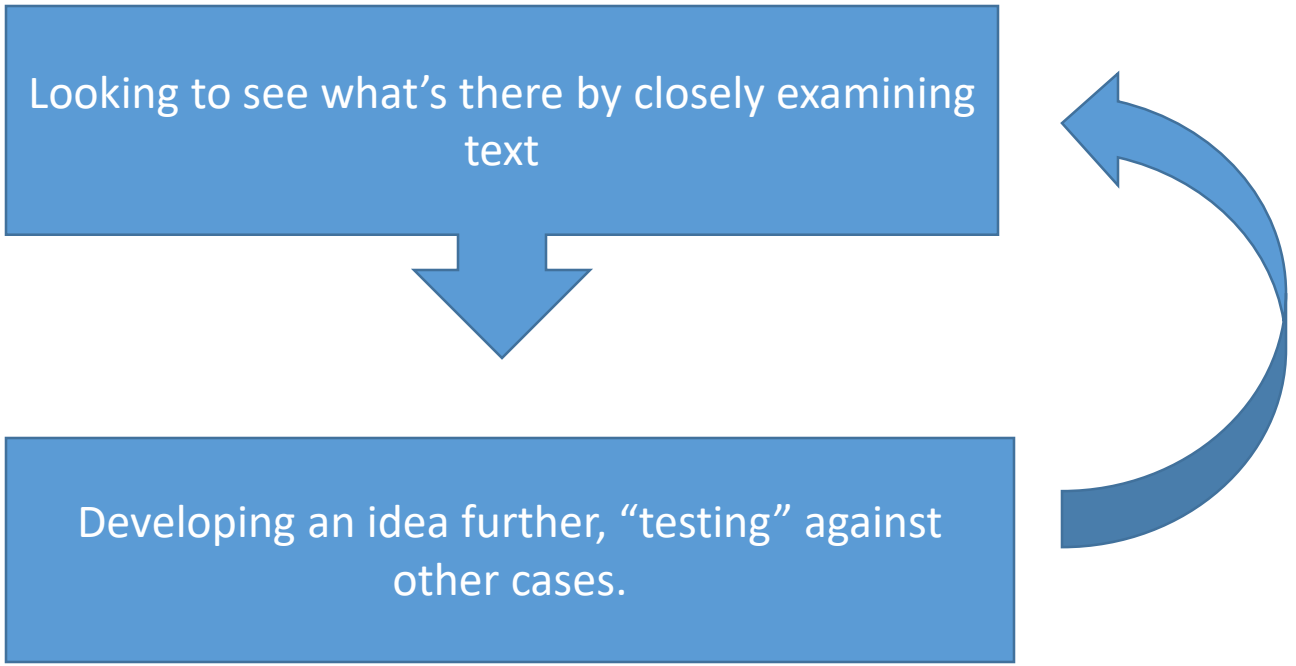
- What perspective am I coding this from?
  - Residency admissions committee member considering this candidate?
  - Medical student learning how to write a personal statement?
  - Patient searching for a new Obstetrical provider?
  - Sociologist investigating why people choose different specialties?
  - Linguist or rhetorician interested in how people construct expertise?

The role of coding in analysis

Grounded Theory Coding



Grounded Theory Coding



Logic of Initial -> Focused Coding

How to categorize these buttons?

Start by describing what's there

Light blue, flower shaped, four holes, opaque, decorative, matte

Spring green, shiny, four holes, round, concave, faint design pattern that looks like stone.

Round, cream and brown, more dramatic design pattern, four holes, saucer lip, shiny.

Then look for patterns, categories.

Light blue, flower shaped, four holes, opaque, feminine, matte

Spring green, shiny, four holes, round, concave, faint design pattern that looks like stone.

colour

finish

Round, cream and brown, more dramatic design pattern, four holes, saucer lip, shiny.

Return to the data with these patterns in mind

A brief worked example- and then more explanation

How do medical students understand the ideal traits of an obstetrician-gynecologist?

Being in a home with five women instilled in me a deep sense of empathy and listening skills that would later be necessary for me in a field where the presenting symptoms and problems would never be personally experienced. From an early age I was exposed to a full range of women's health issues which now allows me to discuss these issues in an open and comfortable manner in a variety of clinical settings. Having a sister with Down syndrome gave me many opportunities to educate others from a young age, which has since developed into a strong desire to be in an environment where education and teaching are prevalent. Coming from a large family, there are differing passionate views of everything from religion and politics down to how to cook a turkey, which conditioned me to be a team player, overcoming differences and obstacles to reach a common goal. Ultimately, growing up in this environment helped me develop the interpersonal skills and characteristics necessary to succeed as a physician.

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Meredith
empathy

Meredith
listening skills

Meredith
female gender

Meredith
Desire and ability to have children (personal experience?)

Meredith
Ability to discuss sensitive topics openly and comfortably

Meredith
Ability to educate

Meredith
Desire to educate

Meredith
Ability to disagree and still work collegially

Meredith
Team player

Meredith
Willingness to overcome differences with oth

Meredith
Work together to overcome obstacles to goa

Meredith
Ability to identify common goals

Meredith
Vague- letting reader infer we have a shared understanding of what these are?

Communication
Listening skills
Ability to discuss sensitive topics openly and comfortably
Interpersonal skills (vague)

Intrinsic Traits
Empathy
Female gender
Characteristics necessary to succeed as a physician (vague)

Orientation to Education
Ability to educate
Desire to educate

Working with others
Ability to discuss sensitive topics openly and comfortably
Ability to disagree and still work together
Team player
Willingness to work together to overcome obstacles to goals
Interpersonal skills (vague)

Experiences
Personal experience with obstetrical and gynecologic issues
Characteristics necessary to succeed as a physician (vague)

Desire to solve problems
Willingness to overcome differences with others
Willingness to work together to overcome obstacles to goals
Ability to identify common goals

Intrapersonal

Characteristics necessary to succeed as a physician (vague)

Ability to identify common goals (cognitive ability?)

Interpersonal

Empathy

Listening skills

Ability to discuss sensitive topics openly and comfortably

Ability to educate

Desire to educate

Ability to disagree and still work together

Team player

Willingness to overcome differences with others

Willingness to work together to overcome obstacles to goals

Interpersonal skills (vague)

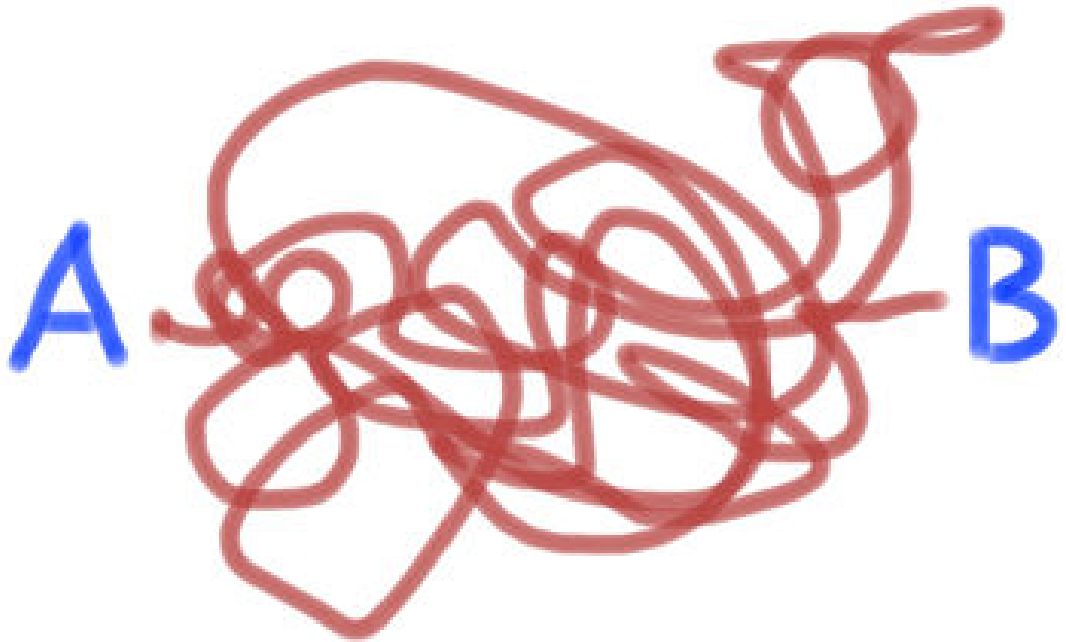
Ability to identify common goals (interpersonal/communication?)

Experiential

Female gender

Personal experience with obstetrical and gynecologic issues

Moving from Coding to Categories: How to transform your codes into an analysis



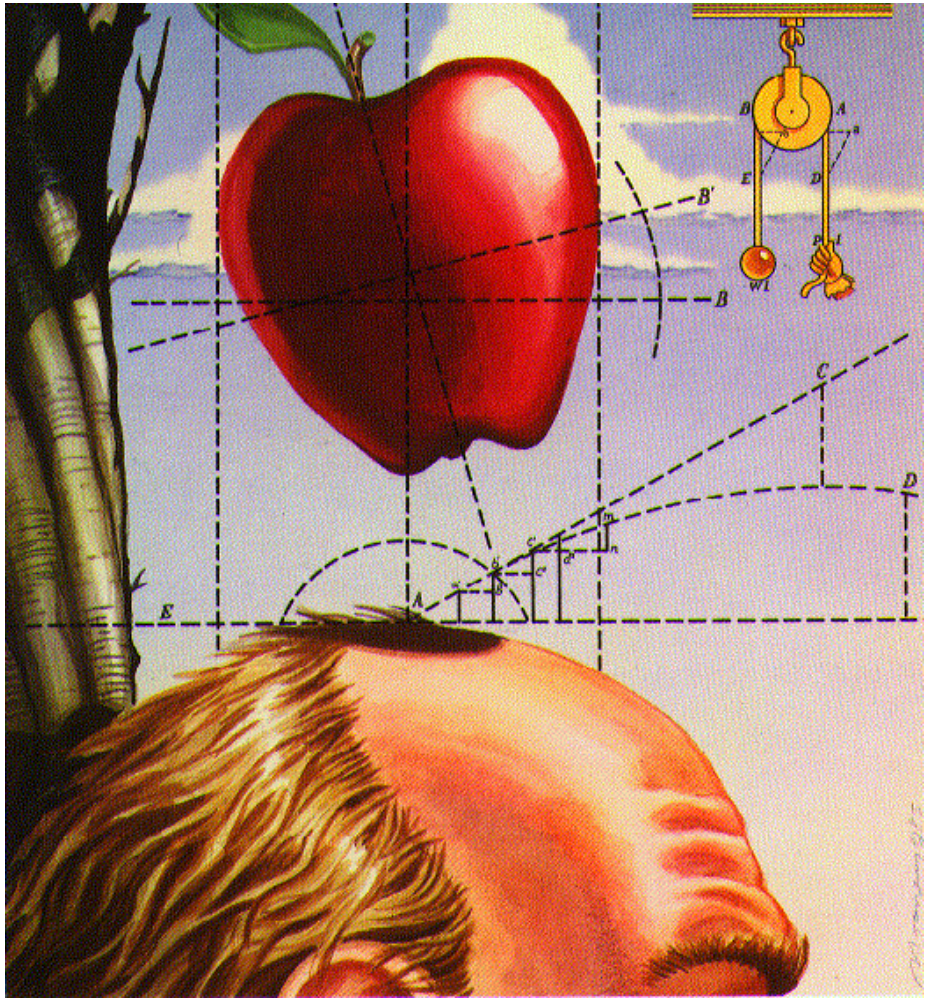
Code v. Theme v. Category

- **Code:** A word or short phrase that symbolically assigns a summative, salient, essence-capturing and evocative attribute for a portion of language or visual data (Saldana, p.3)

- "Think of a **category** as a *word or phrase* describing some segment of your data that is *explicit,* whereas a **theme** is a *phrase or sentence* describing more *subtle and tacit* processes" (Rossman & Rallis in Saldana)

- Theme: outcome of coding, categorization, or analytic reflection. (Saldana p.14)

Theories

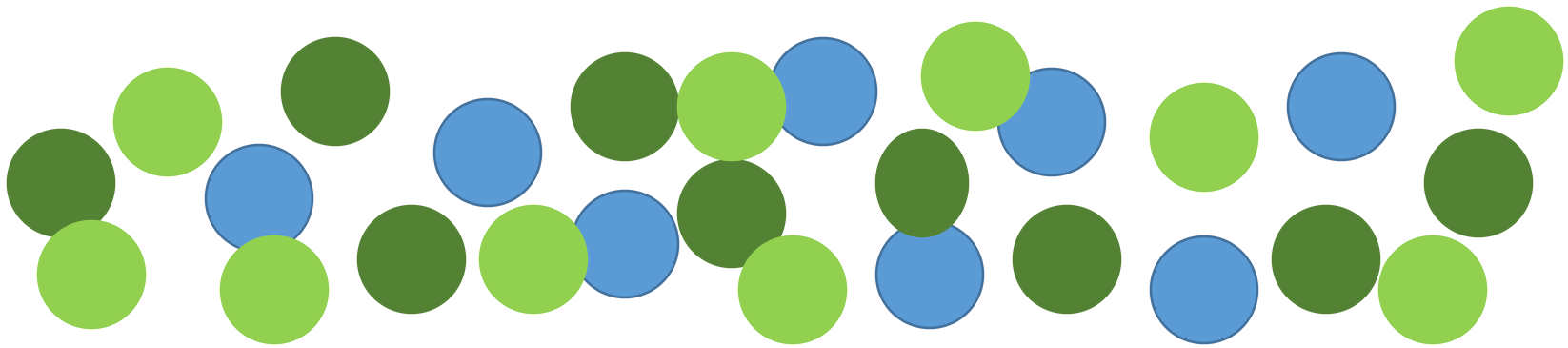


- “Explanation of why things happen the way they do, but not simply a formulation of what we know by experience” (Brooks & Miljan, p.22)
- Abstract reasoning inspired by empirical observation, which can be generalized to other circumstances, offering a predictive function. (Brooks & Miljan)
- Coherent sets of logically interrelated propositions. (Sabatier p.5)
- Primarily interested in the justification of action (why an action is right or wrong, what we ought to do and why) (Dawson)
- Place value on the variables identified as important by a framework, posit relationships between variables and make predictions about likely outcomes (Schlager)

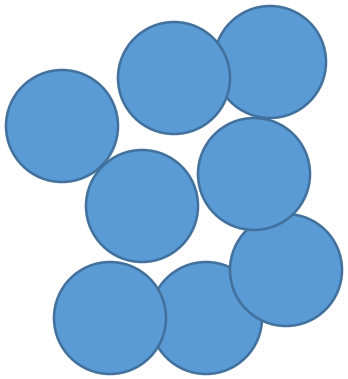
Focused Coding

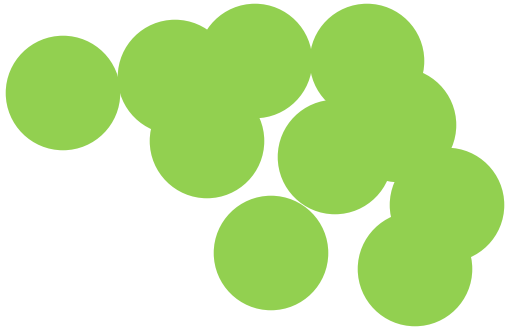
- Identify most significant or frequent earlier codes from initial code.
- How might you further organize these codes?
- Go back to data again and look for other instances
  - Sometimes see something you didn’t initially recognize
- Intent of focused code is to condense data
- To choose a direction? Trust intuition, what you find interesting, what seems unique or relevant.

Moving from Codes -> Theory

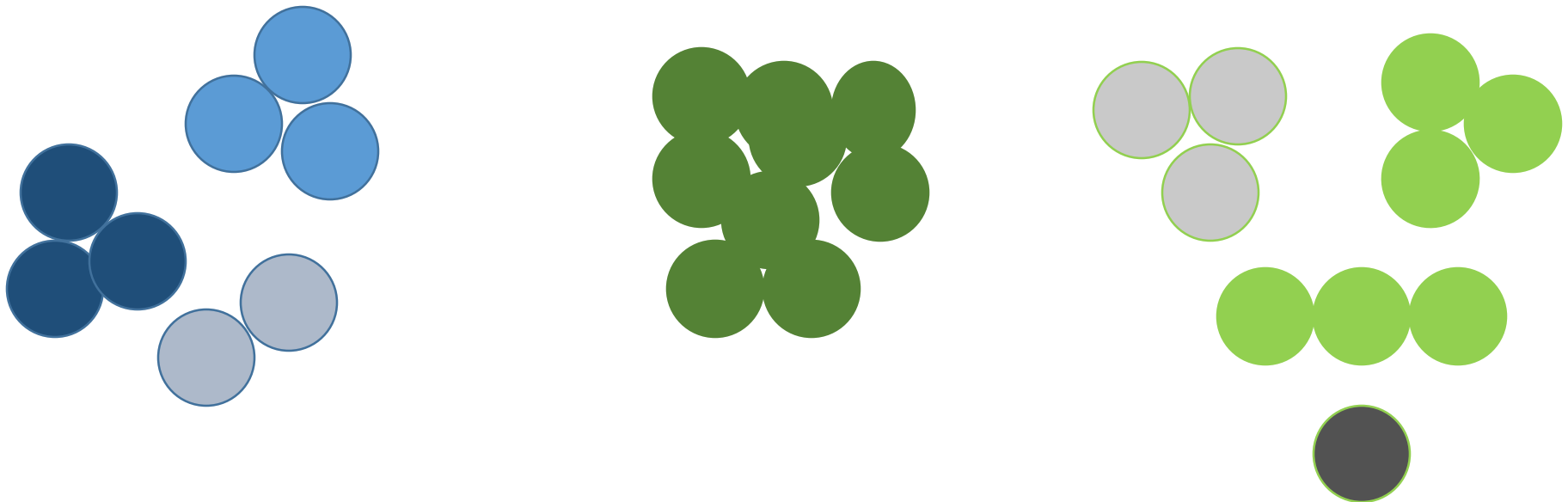


Moving from Codes -> Theory

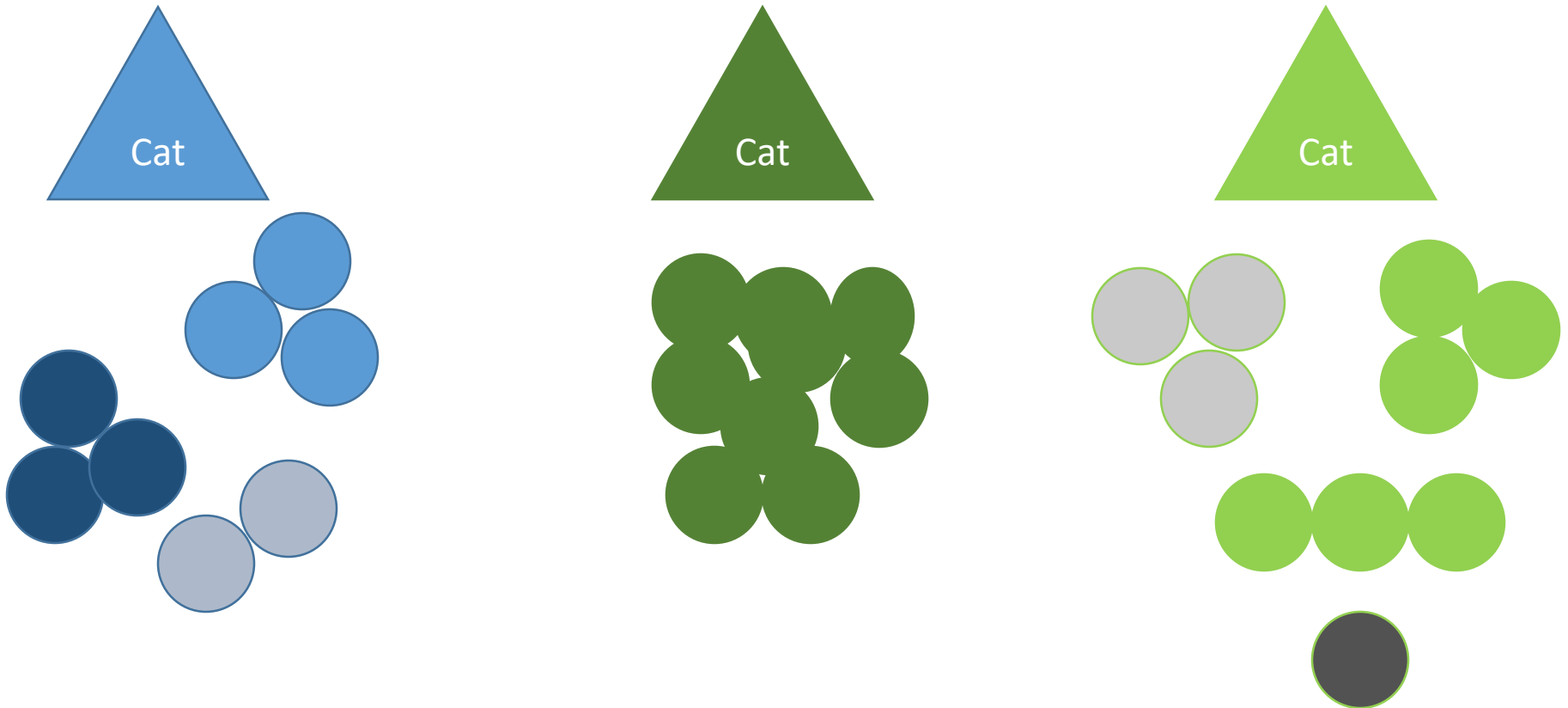




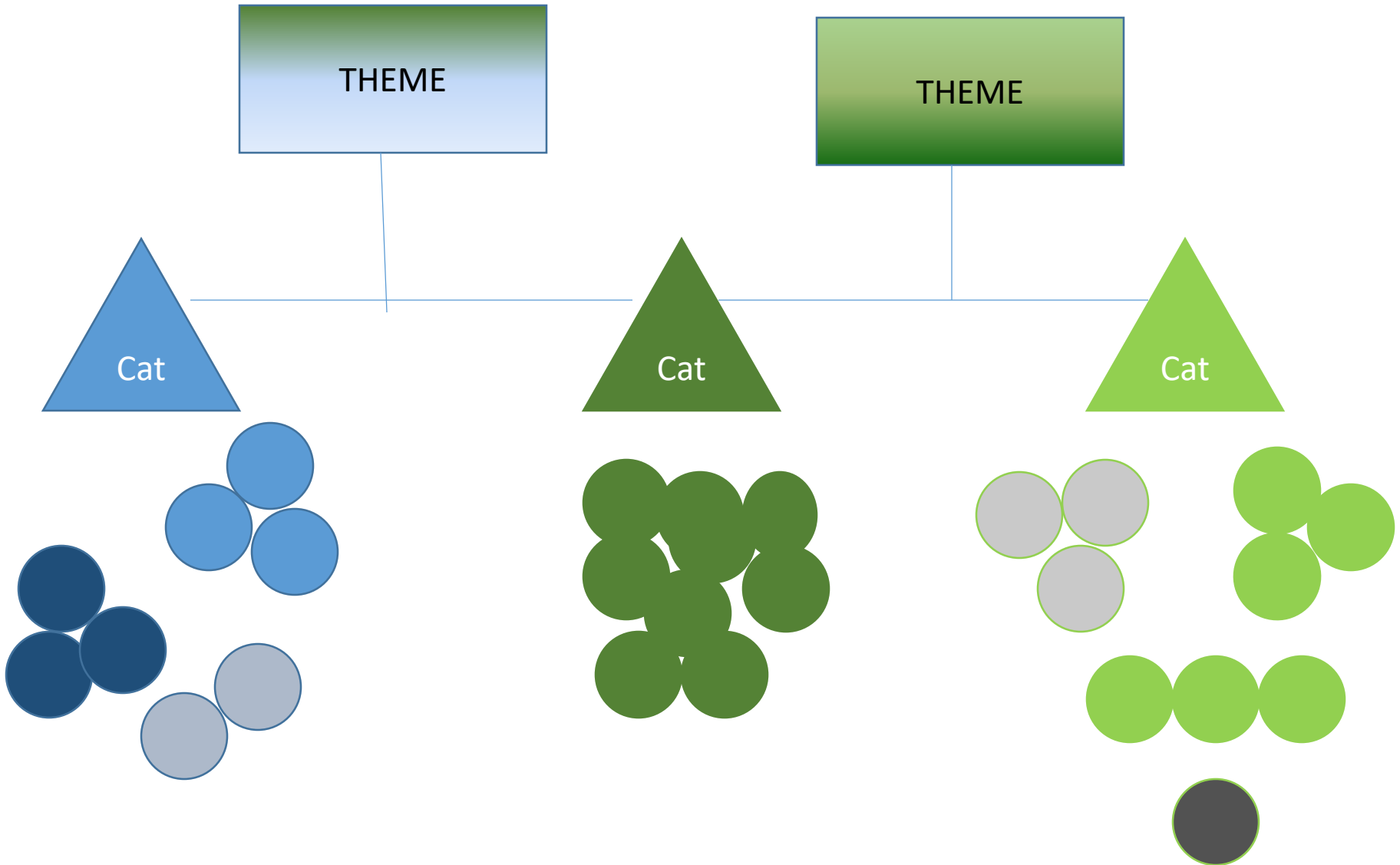
Moving from Codes -> Theory



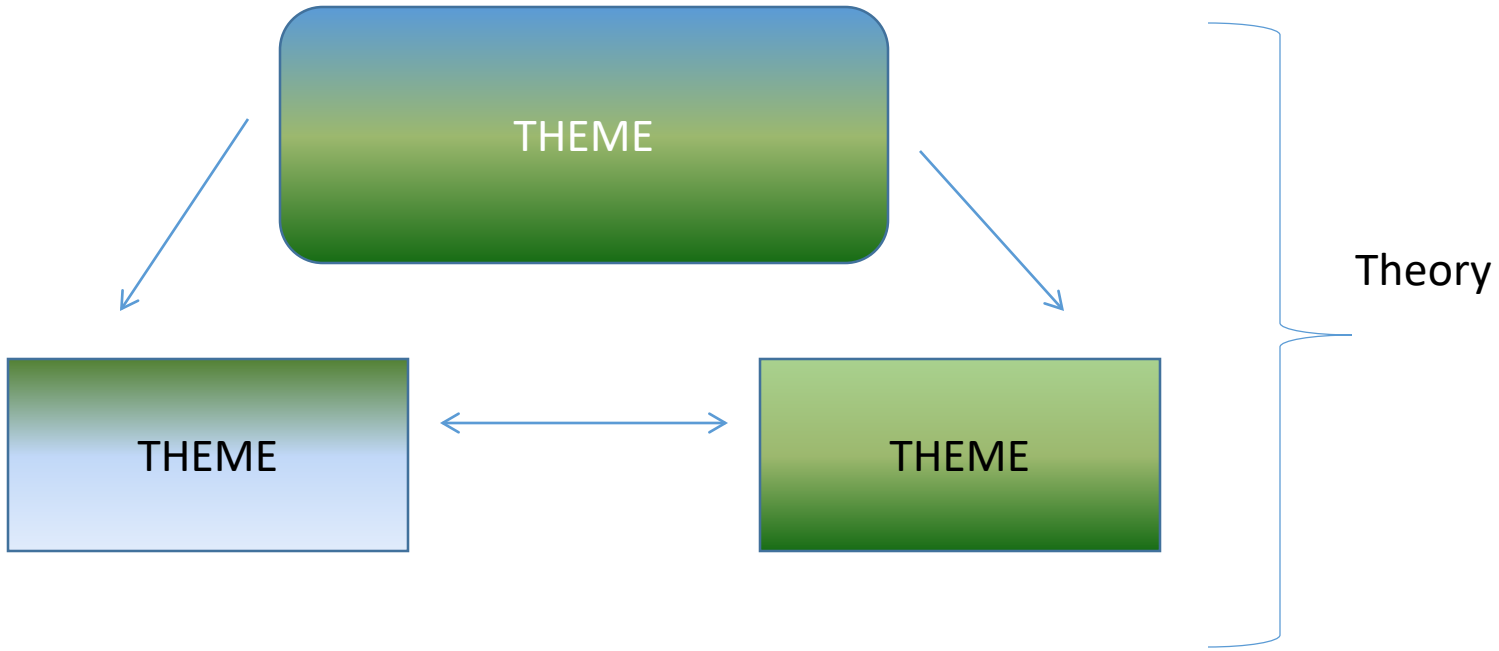
Moving from Codes -> Theory



Moving from Codes -> Theory



Themes -> Theory



A Real Example

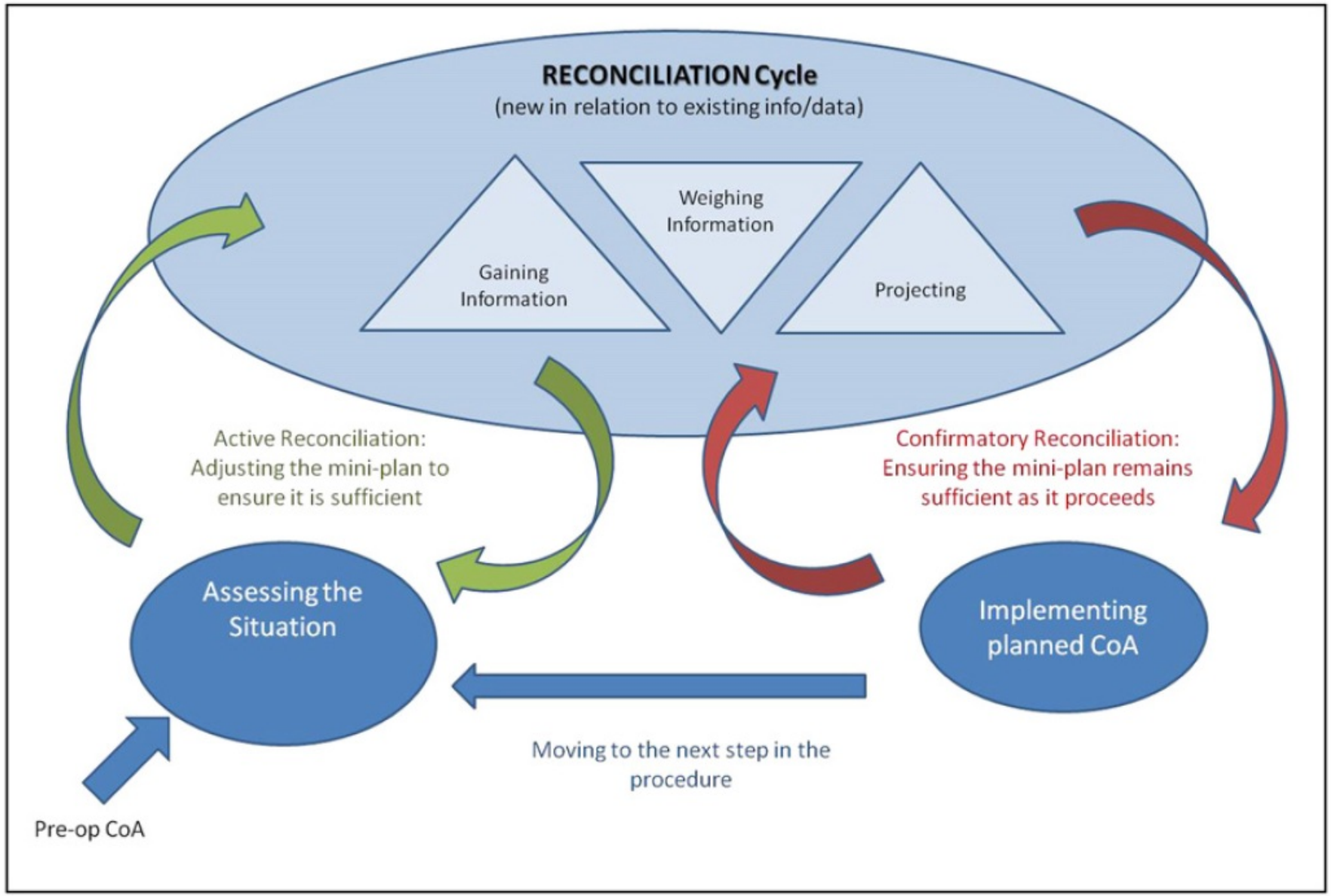
The American Journal of Surgery (2013) 205, 156-162

The American Journal of Surgery®

Association for Surgical Education

When surgeons face intraoperative challenges: a naturalistic model of surgical decision making

Sayra M. Cristancho, Ph.D.[a,*], Meredith Vanstone, Ph.D.[b], Lorelei Lingard, Ph.D.[b], Marie-Eve LeBel, M.D.[a], Michael Ott, M.D.[a]


RECONCILIATION Cycle
(new in relation to existing info/data)
Weighing Information
Gaining Information
Projecting
Active Reconciliation:
Adjusting the mini-plan to ensure it is sufficient
Confirmatory Reconciliation:
Ensuring the mini-plan remains sufficient as it proceeds
Assessing the Situation
Implementing planned CoA
Moving to the next step in the procedure
Pre-op CoA

Where we started…..

- 32 post-surgery interviews + observational field notes of the surgery
  - What was challenging?
  - How did you know it was challenging?
  - Why was it challenging?
  - What did you do when you encountered a challenging situation?

Open Coding

- Knew we were interested in what took place IN the operating room, assumed that each surgery began with a plan that happened beforehand.

- Went through transcripts just looking for descriptions of OR action
  - “Intraoperative Judgment Issues”
  - “Intraoperative Technical Issues”

From literature, prev work & collaborators

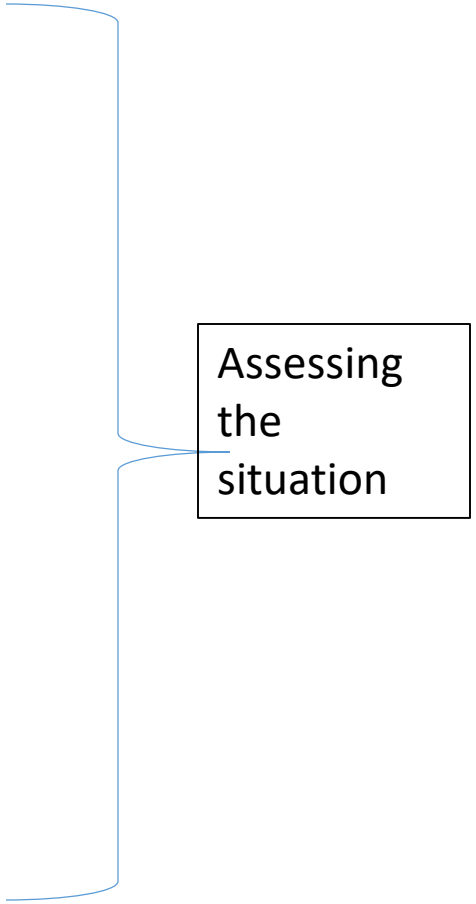
Judgment/Technical Issues

- Technical issues often directly related to judgment:
  - Can I?
  - Should I?
  - Should I let the resident?
  - What tool to use?
  - What technique to use?

- So….. Re-worked coding to focus on the judgment aspects.
  - Kept a special category of “technical that can’t be integrated into judgment”

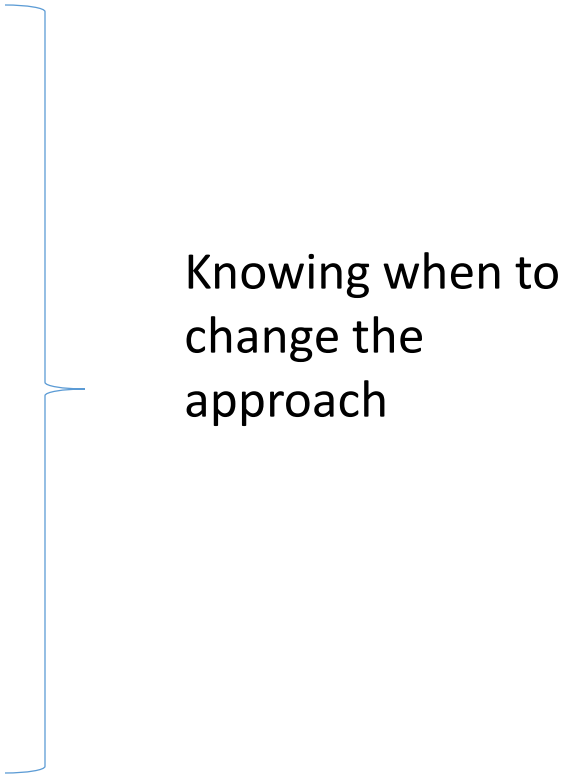
Some open codes -> categories

- Accessing anatomy
- Exposing mass or defect
- Identifying anatomy
- Orienting self via anatomy
- Predicting how tissue will respond
- Recognizing mass or defect
- Situational awareness
- Information used to gain information



Open code -> Category

- Trying for best outcome
- Preventing compromise of planned outcome
- Responding to information
- Responding to new events
- Struggling with anatomy
- Maintaining safety



Categories

- Assessing the situation
- Considering options
- Evaluating work
- Interpreting intraoperative information
- Knowing when to change approach
- Planning ahead
- Problem-solving
- Receiving intraoperative information
- Safety and outcomes

Moving from categories to concepts

- SC & MV formed categories, wrote definitions, tested definitions, looked for alternatives.
- Team meeting with definitions, selected excerpts, refine categories, suggest major concepts.
- SC & MV played with concepts, relationships, trying to create a theory
- Team meeting with emerging theories.

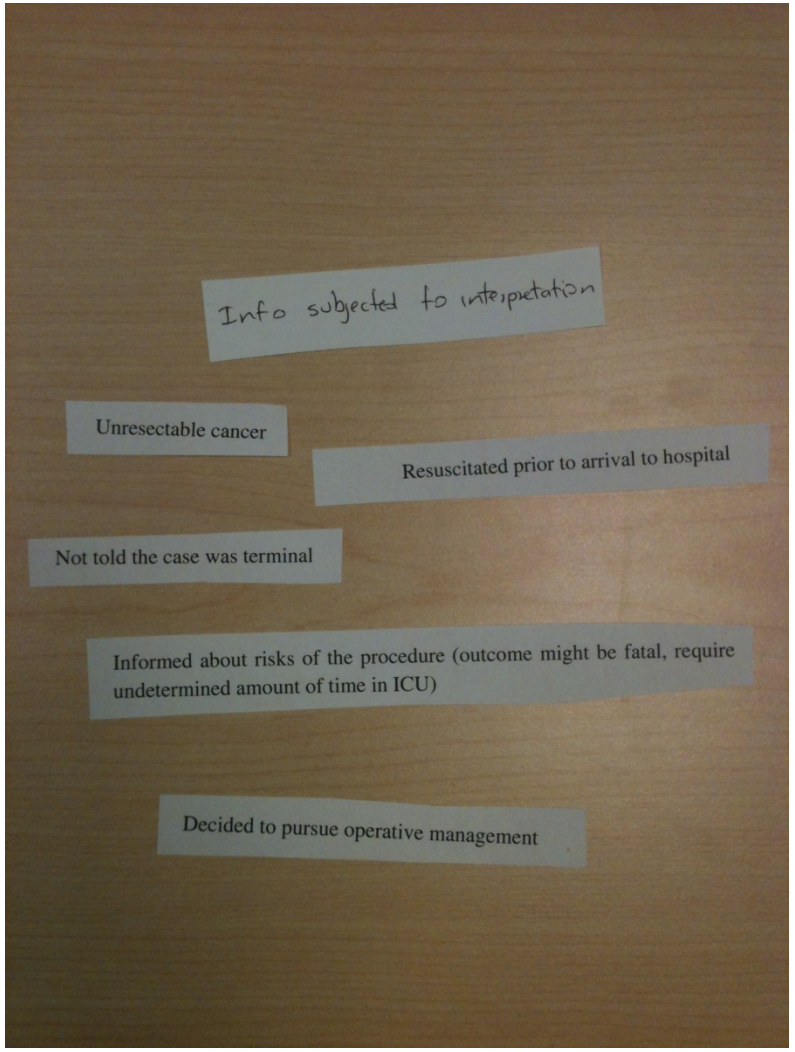
Involving Collaborators

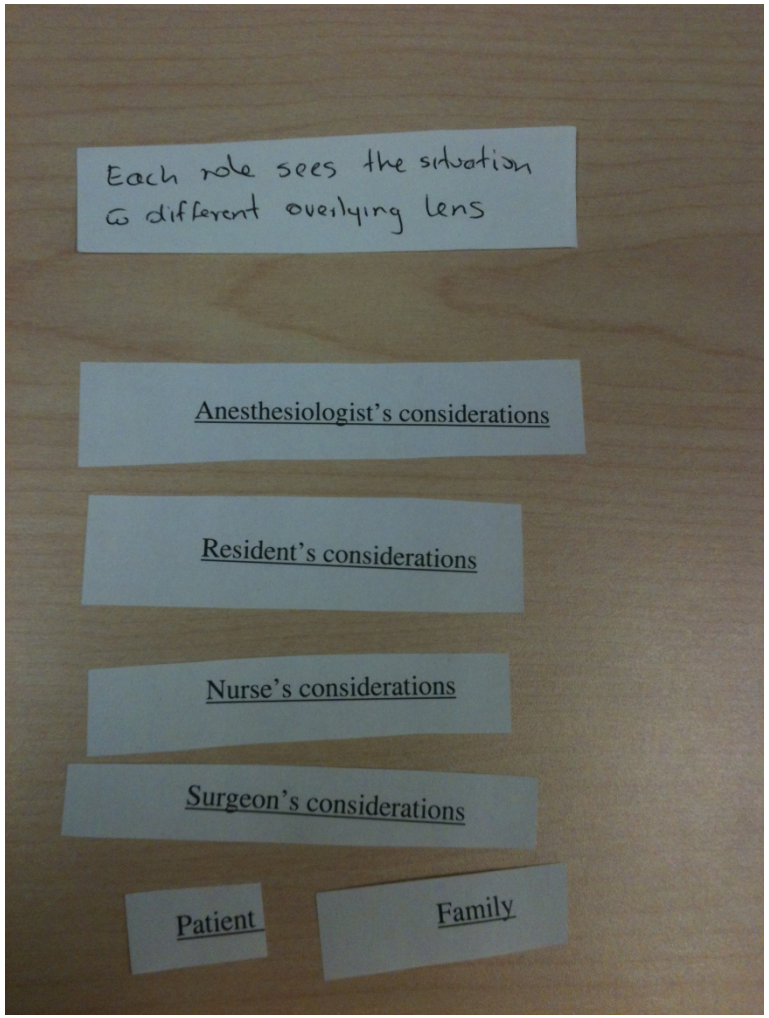
Categories + definitions to 3 surgeons, 1 academic (not SC & MV)

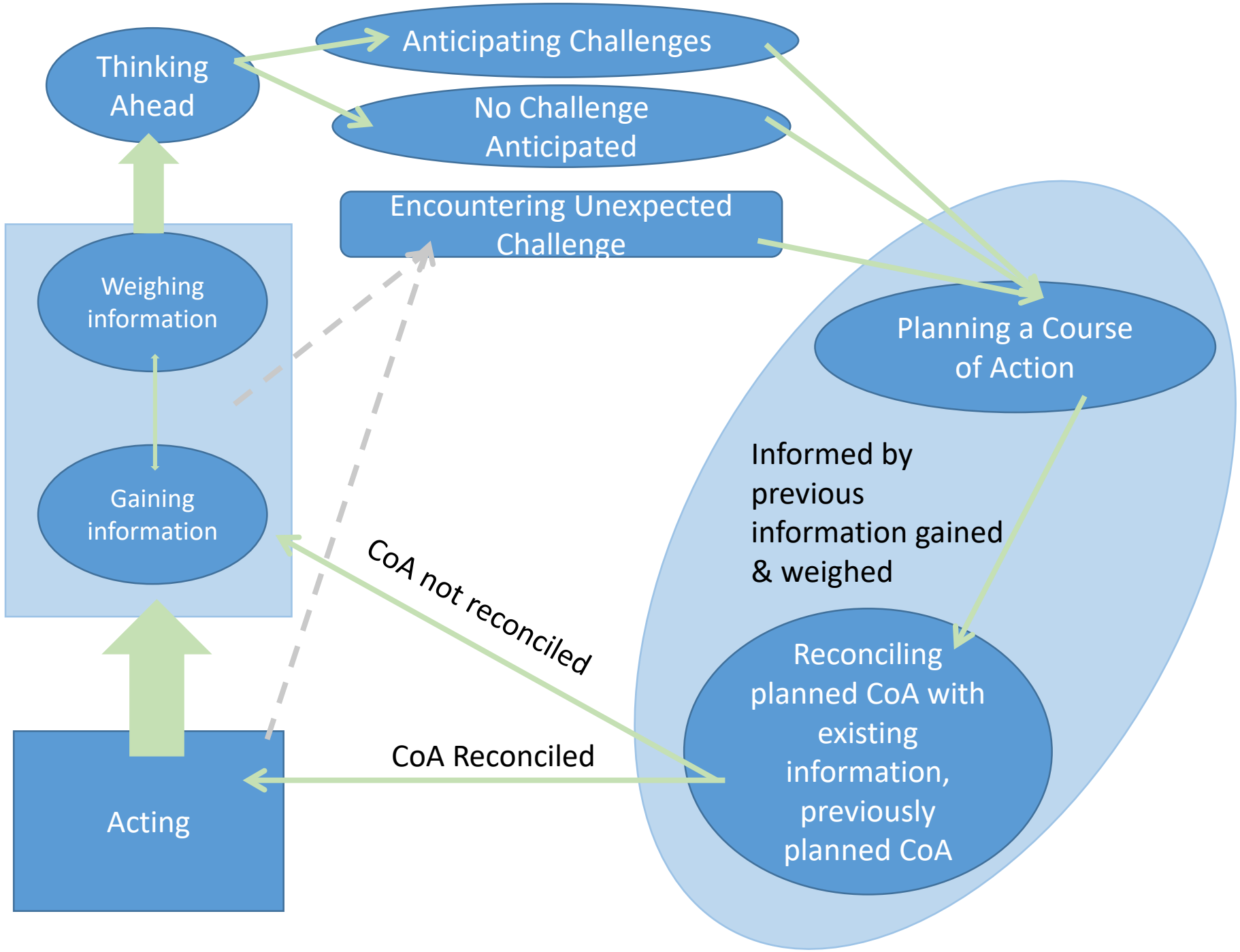
They made diagrams, drew in new ideas, cut + pasted to represent relationships etc. Grouped codes into categories, categories into themes.

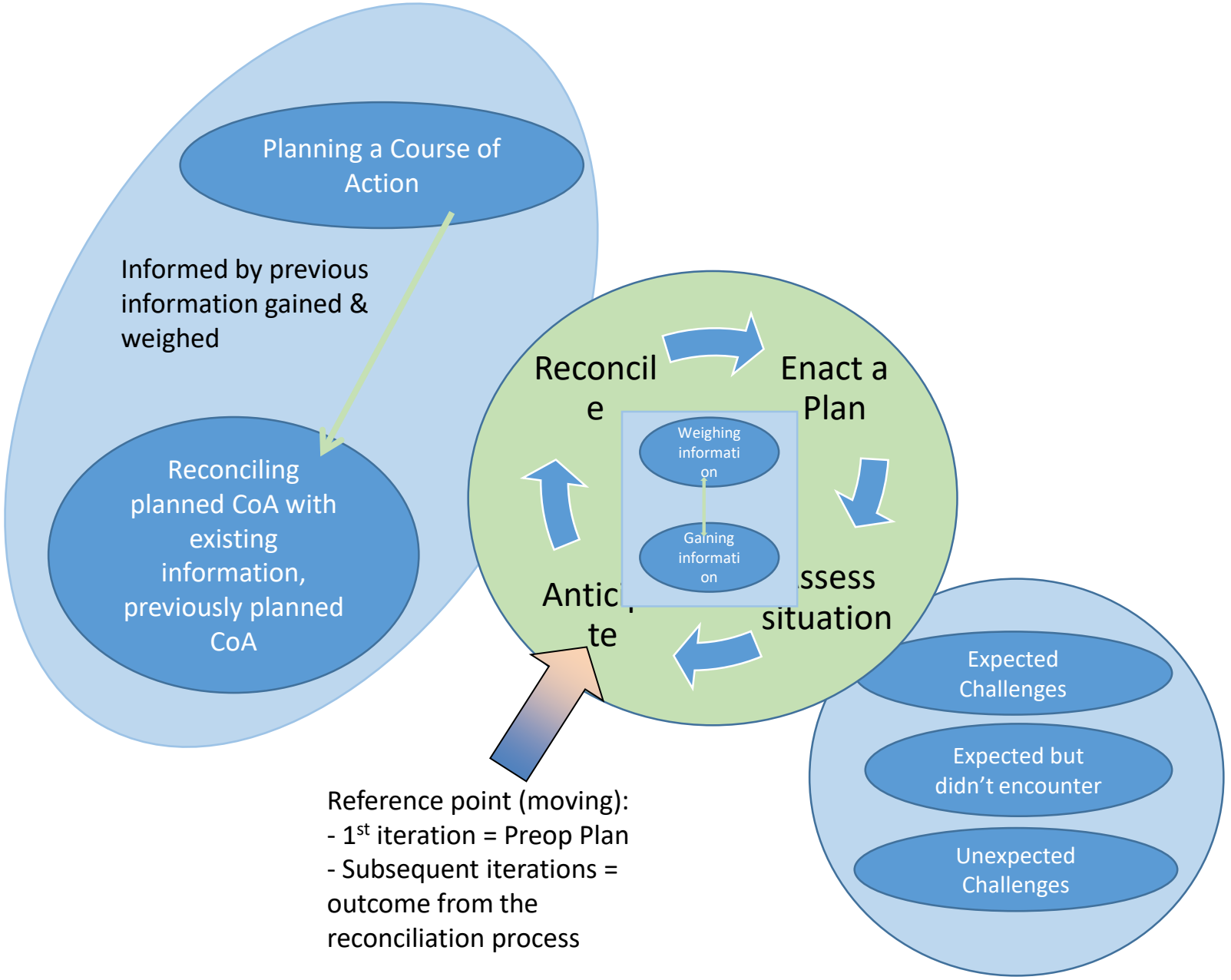
All diagrams discussed as a group, synthesized and used as the basis of new theory.

High Tech Categorization





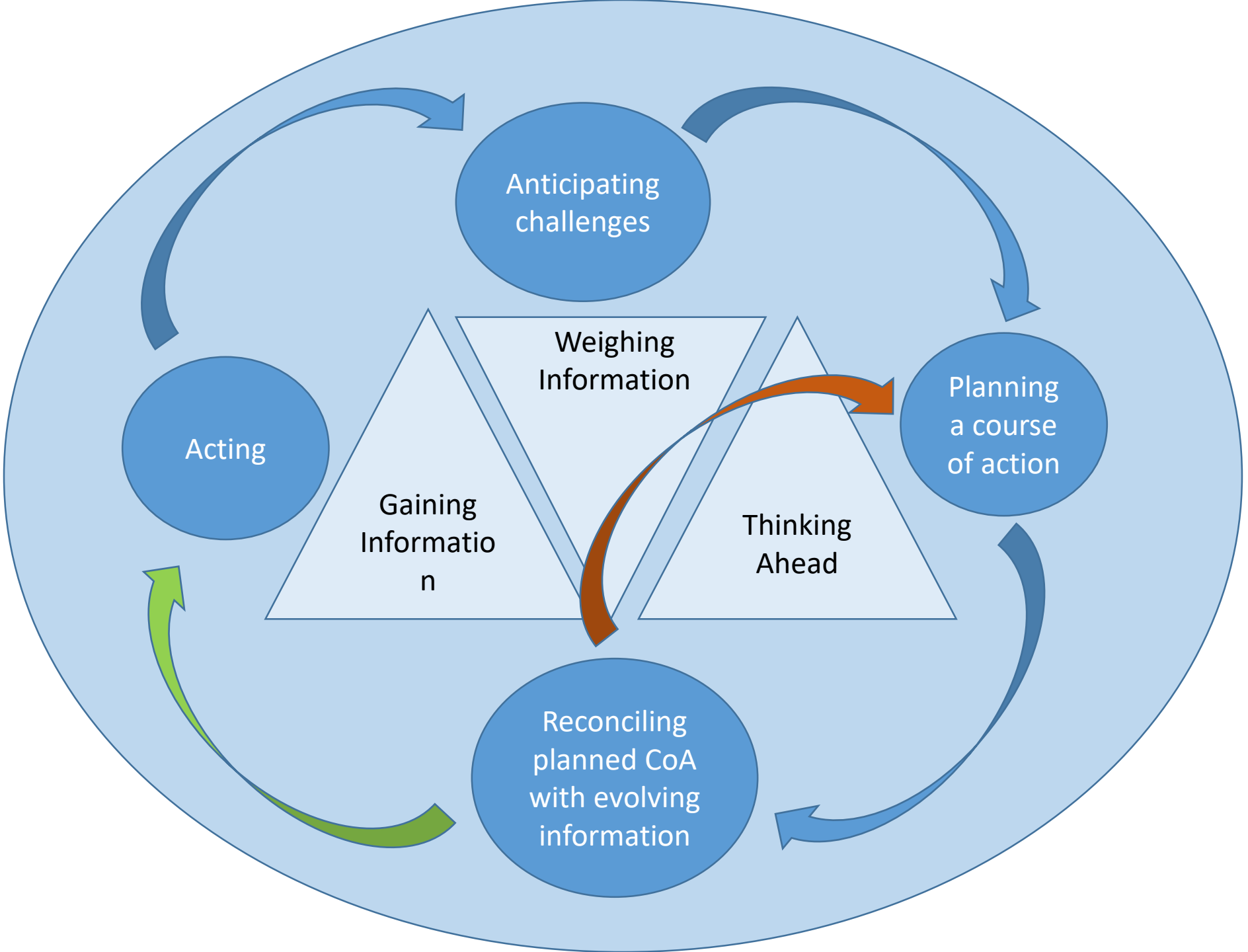

Thinking Ahead
Anticipating Challenges
No Challenge Anticipated
Encountering Unexpected Challenge
Weighing information
Gaining information
Planning a Course of Action
Informed by previous information gained & weighed
CoA not reconciled
Reconciling planned CoA with existing information, previously planned CoA
CoA Reconciled
Acting

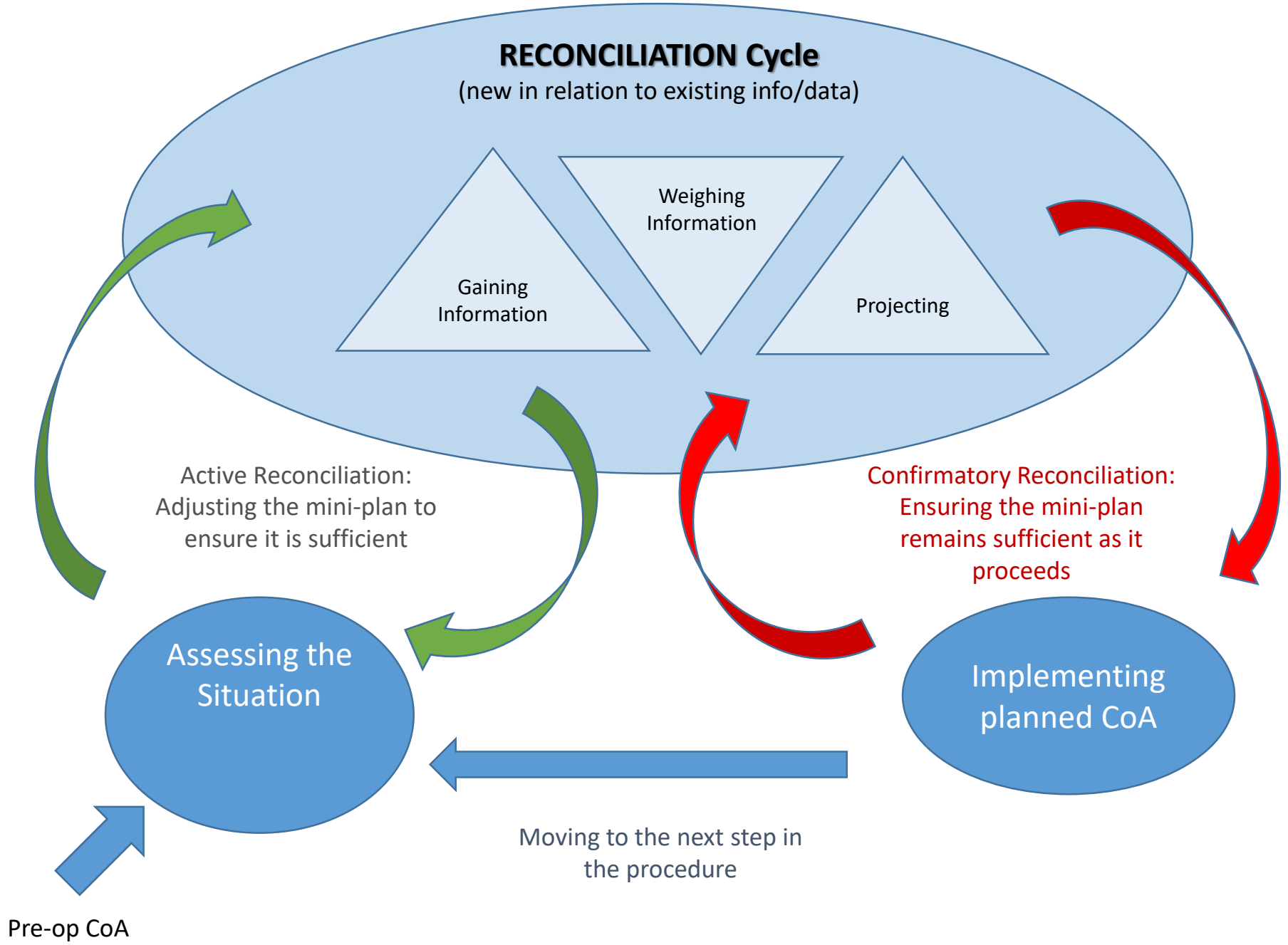

Planning a Course of Action
Informed by previous information gained & weighed
Reconciling planned CoA with existing information, previously planned CoA
Reconcil e
Enact a Plan
Weighing informati on
Gaining informati on
Antic te
ssess situation
Expected Challenges
Expected but didn't encounter
Unexpected Challenges
Reference point (moving):
- 1st iteration = Preop Plan
- Subsequent iterations = outcome from the reconciliation process

3 Main Concepts

- Assessing the situation
- Reconciliation Cycle
  - Gaining information
  - Weighing/Judging information
  - Projecting future outcome
- Implementing Planned Course of Action

- But, how are they related?


Anticipating challenges
Planning a course of action
Reconciling planned CoA with evolving information
Acting
Weighing Information
Gaining Information
Thinking Ahead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Closing thoughts