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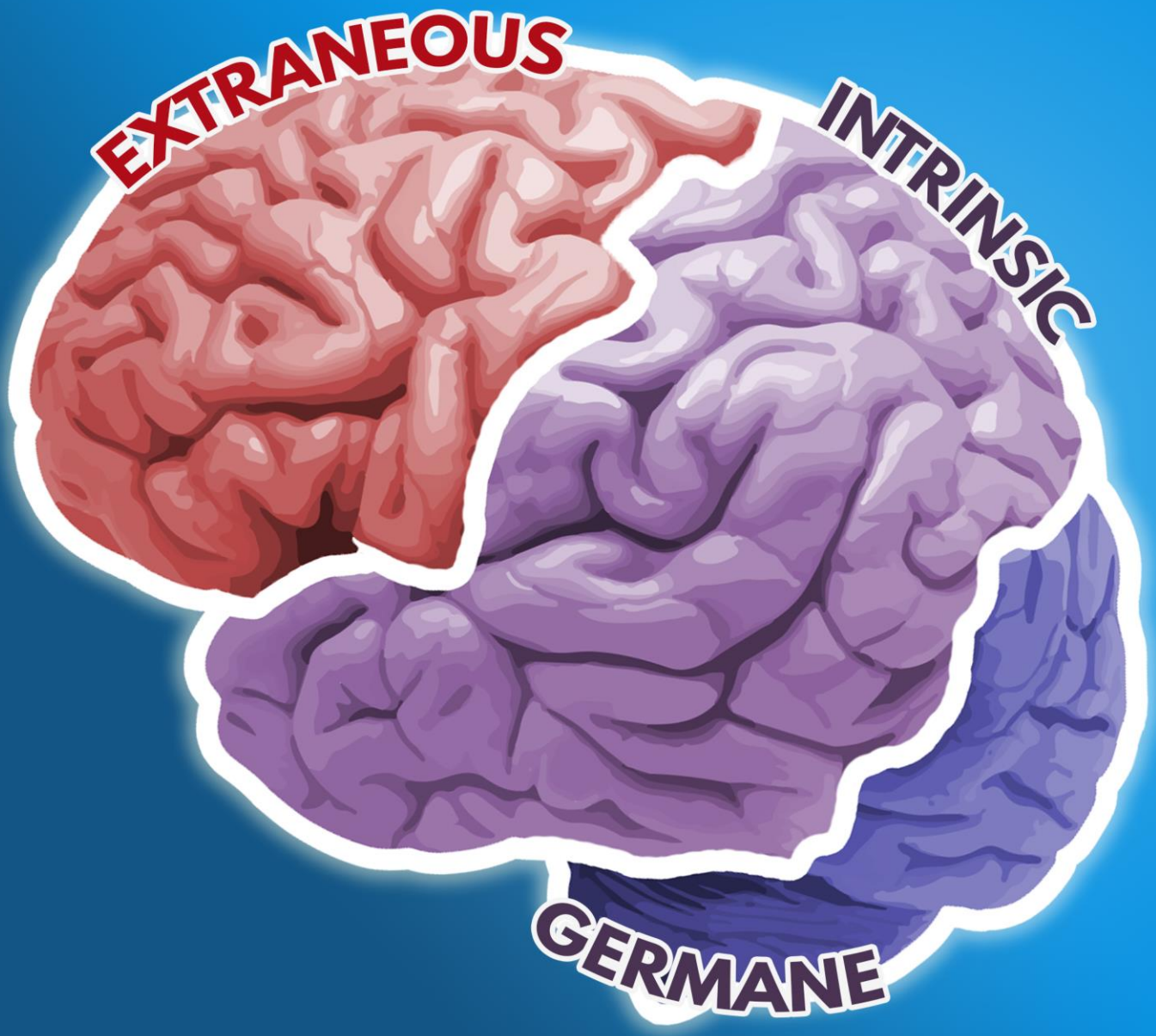
Journal Club Summary March 2019 : "How to Host a Debrief"



Expert Opinion: Jack Matulich

"While it is a fair call to consider completely omitting an obvious drain on cognitive load, it must be considered in the context of opportunity cost"

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The Article :

"Cognitive Load Theory for debriefing simulations: implications for faculty development. "

Fraser, K., Meguerdichian, M., Haws, J., Grant, V., Bajaj, K. and Cheng, A. (2018).
Advances in Simulation, 3(1).

Case & Summary Author :

- Ben Symon

Expert Commenter :

- Jack Matulich

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Simulcast Journal Club is a monthly/ series that aims to encourage simulation educators to explore and learn from publications on Healthcare Simulation Education.

Each month we publish a case and link a paper with associated questions for discussion.

We moderate and summarise the discussion at the end of the month, including exploring the opinions of experts from the field.

The Case :

Nimali pulled Nitin hastily into the supply closet and shut the door.

"The phone towers are down." She whispered. "The roads around the education centre are flooding from the hailstorm and the police could be hours away. We're stuck here surrounded by floodwaters with our entire simulation faculty, the corpse of a particularly sarcastic paediatric intensivist and a tea room stocked exclusively with International Roast Caterer's blend.".

Nitin winced. "There's only one thing to do in a situation like this."

Nimali nodded sagely. "We're going to debrief the shit out of it. If we don't work out who the murderer is by the time the cops arrive, hospital executive is going to find out what's happened and they'll close down our whole program."

A flash of fear went across Nitin's face. "If we do this we need a game plan, Nimali. This isn't like other debriefs : Catherine's crying her eyes out even though she hated Snythe, Brad's frantically washing blood off his palms Macbeth style in the change rooms and Jacob has enough extraneous load on him just trying to stop Jessica live tweeting from the crime scene. We don't exactly have experience crime solving, and while you're debriefing, we'll need to be checking for the clues in people's statements. After all, you and I were the only ones not on campus when this happened."

Nimali thought for a few precious seconds. Nitin's heart still gushed at her ability to stay calm in the most horrific of crises. Crime solving, it had to be acknowledged, looked good on her.

"OK." Said Nimali. "Here's what we're going to do. I'm going to ask everyone to help me make some coffee in the tea room. You go get Brad and help him move the body out of the debriefing room and into one of the supply rooms. There's no way anybody will be able to focus with Snythe still in there."

Nitin nodded solemnly.

"Once the body's moved, I'll take us all into the debriefing room. We'll calm down Catherine, keep Jacob and Jessica engaged in the conversation and away from their social media. Brad used to work in forensic pathology so we'll use him as our expert in the room, and together we can start piecing together what happened."

Nitin smiled. "OK we got this. And to help with the germane load of it all, I'll give you feedback with the DASH Serial Killer Version."

Nimali kissed him quickly on the cheek. "You gotta give them credit," she said wryly. "There really is a DASH for everything.".

Discussion :

When faced with learning to debrief, facilitators experience a wide variety of different types of cognitive load.
In this month's article, Fraser et al break down cognitive load theory for educators, and provide sensible and practical interventions to optimise load when learning a new skill.

For our journal clubbers this month : What sort of cognitive strains do you find particularly challenging? How does this paper assist you in both simulation delivery and simulation design?

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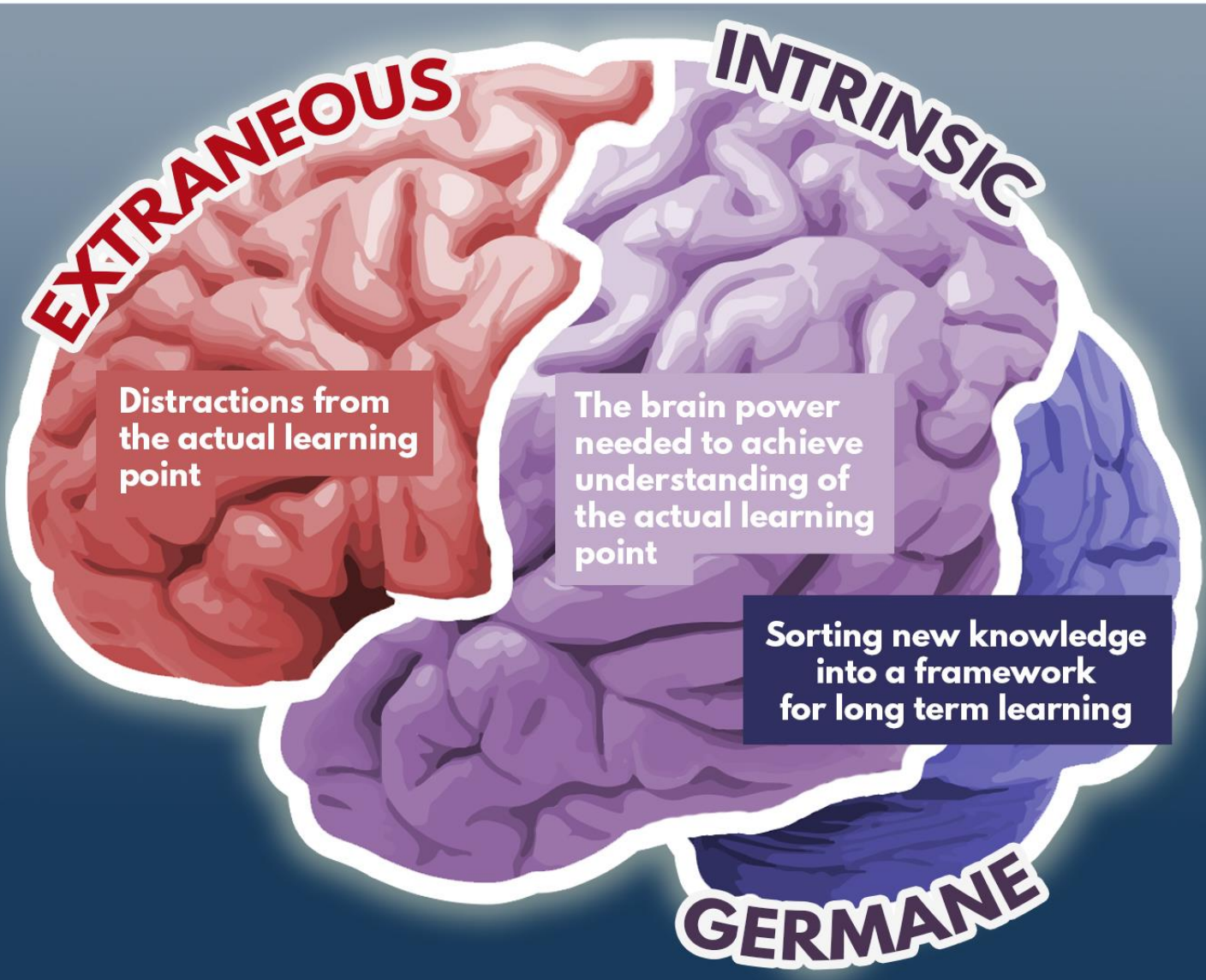
JOURNAL CLUB INFOGRAPHIC

Kristin L. Fraser Michael J. Meguerdichian, Jolene T. Haws, Vincent J. Grant, Komal Bajaj and Adam Cheng (2018).
Cognitive Load Theory for debriefing simulations: implications for faculty development
Advances in Simulation, 3(1).

Fraser et al first explain cognitive load theory :



And then outline causes and mitigating strategies for each.

Extraneous : Helped by streamlined instructional design, a good prebrief, physical room layout, & advanced planning with your co-debriefer.

Intrinsic : Gets lower with experience. Helped by smaller group size, debriefing cognitive aids, scripting, good time allocation, use of content experts, shared decision making with learners.

Germane : Helped by reflection, feedback, mindfulness.

Infographic by @symon_ber

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Expert Opinion: **Jack Matulich**

Jack is a Simulation and Practical Training Clinical Facilitator.

Jack has a clinical background in intensive care and prehospital nursing and post graduate adult critical care qualifications. Jack likes translating behavioural economics concepts to all aspects of healthcare from policy through to clinical decision making. His passion is thinking divergently about (ir)rationality and heuristics in the resuscitation setting to improve patient outcomes. Jack is currently completing postgraduate behavioural economics training through Queensland University of Technology School of Business while beginning to look at the effect of cognitive load on CPR quality as a research project.

Follow Jack @JackMatulichRN

Reviewing this article has been a transformative process for me. It has been incredibly interesting reframing debriefing as a learning experience for not only the learners but the debriefers too. Even more so I found reading this article cathartic in realising that a lot of my own struggles as a novice debriefer are shared by others and there's ways to address them. For me, I see the highest value in this article for those learning the art of debriefing. By acknowledging the demands of the role and normalising the spectrum of ability as we develop, I hope we can shape more mindful and effective debriefers.

As an economist at heart, I tend to want to perform a cost benefit analysis on anything and everything involving choice; cognitive load is no different. The comments between Ben and Jenn regarding their differing experiences with the cognitive load of AV replay in debriefing highlight to me that the cognitive 'costs' generated by a particular task are unique to the individual. Factors such as experience, emotions and predispositions (among many more) impact how much a task such as operating AV equipment adds to the debriefer's extraneous cognitive load. While it is a fair call to consider completely omitting an obvious drain on cognitive load, it must be considered in context of opportunity cost. That is, by scrapping AV playback we may gain more cognitive space to be responsive, engaged and effective in debriefing, but what is the cost to participants?

I think it's reasonable to argue that what we consider extraneous cognitive load for ourselves as debriefers may not be mutually exclusive from the intrinsic and germane cognitive load of learners. As such, what this paper has highlighted for me (in a very meta way) is the importance of interplay between our own relationship with cognitive load and the how this could affect simulations we design for learners. The outcome from operating in this frame is sorting cognitive wheat from the chaff to find two things. Firstly, what is cognitively taxing but worthwhile improving, and secondly, what is cognitively taxing but can be safely culled. Applying this concept for me will look like regularly taking stock of what disproportionately consumes my cognitive load as a debriefer; making concerted effort improving the areas that are valuable to learners and mitigating the rest.

I agree with Fraser's comment that debriefing is a complex, intricate art that requires practice to achieve proficiency. Ironically, the best debriefers can carefully orchestrate all the moving parts into a seamless discussion that appears natural and effortless to the naked eye. For novice debriefers, this can set up internal expectations that are bound to exceed cognitive capacity if they dive straight in expecting the same outcomes. Susan's comment on new debriefers saying they didn't realise how hard it was until they started debriefing is case-in-point. In the early stages, each of these moving parts requires resource-intensive 'System 2' style thinking before they are committed to long term memory through experience and become rapid recall 'System 1' thinking. This is compounded by the added intrinsic load of coordinating these moving parts in a deliberate and calculated manner.

The use of frameworks certainly helps remove some of this load however a balance needs to be struck with being prescriptive enough to achieve the desired outcomes while also allowing the organic flow of discussion. I also appreciate Susan's comment regarding a titrated buddying of debriefers by experienced peers. I think this method helps the debriefer limit their intrinsic load and expand germane load to facilitate committing the new skill to long term memory. As the novice attains new skills, the mentor can transition to co-debriefing and then mentoring their ongoing development.

Vic raised the idea of self-rescue from cognitive overload, which I think is an invaluable concept- providing the debriefer can recognise cognitive overload in real time. Anecdotally, I cannot recall recognising cognitive overload while debriefing; this has always been realised retrospectively. A brief literature search didn't find much on the topic, so I'd be interested to know what other people's experiences are? There is research that identifies measures such as heart rate blood pressure product and pupil size fluctuation to identify cognitive load. As a point of interest I occasionally watch my heart rate using my smartwatch while observing a debrief. I've found reliable peaks in moments when I feel most passionate about a topic being discussed. Perhaps in the future our wearable tech may be able to notify us when we're approaching our cognitive capacity and prompt us to self-rescue.

I think there's a lot that can be said for not being the content expert- even when you *could* be the content expert. I really resonate with Eve's statement that the content experts are often in the room. In the large tertiary hospital I work in, our sim team frequently works with clinical areas where none of us have direct clinical experience. We use well defined co-debriefing with a clinical expert who typically has attended our faculty workshops paired with a simulation team debriefer. As Vic highlights, this allows the simulation debriefer to focus on the team science and consequently allows the clinical expert to focus on the clinical processes. Fraser suggests this could give rise to extraneous cognitive load if the debrief leaders diverge from their plan. While the realities of simulation mean divergence occasionally happens, this is mostly mitigated by the team having the same technical foundations in our debriefing workshops and a well-established shared goal (or learning outcome). Reading this article made me reflect on these systems that were implemented well before my time and how much they ensure we're able to be better at what we do.

This article is so valuable in validating many of the challenges debriefers face. As Fraser stated, debriefing is a complex and dynamic art that leverages so much on the debriefer's experiences, strengths and acumen of tools. I hope that both novice and seasoned debriefers alike can use this article to generate a level of self-awareness and a common language to describe their experiences and use each day to be a better educator than they were yesterday by embracing debriefing as a learning experience.

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Summary of this Month's Journal Club Discussion :

Blog Contributors :

- Susan Eller, Ann Mullen, Ben Symon, Jennifer Dale-Tam, Zachary Buxton,
- Eve Purdy, Sarah Janssens, Vic Brazil, Janine Kane, Christina Choung, Michael Meguerdichian

Thanks everyone again for a wonderful discussion this month. I could identify 2 primary themes that resonated in the discussion :

- Cognitive Strain is a fundamental part of the challenging journey towards mastering debriefing.
- Experts and Beginners identify different types of extraneous load.

Cognitive Strain is a fundamental part of the challenging journey towards mastering debriefing.

Susan Eller and Ann Mullen began this month's discussion with a lovely contextualisation of Cognitive Load Theory within debriefing. They emphasised that it is normal, that it is a common challenge, and that interventions such as understanding basic structure, utilising available debriefing tools (like PEARLS) or having a co-debriefer can be useful for the novice debriefer. Interestingly Susan also identified that some of these tools can create their own extraneous load if the users are not familiar with the tool. She summed things up nicely with her statement :

> *I think one of the things that I try to teach new debriefers is that cognitive load exists in debriefing. I can't tell you how many times I will hear new facilitators say they didn't realize that it was challenging. So many times they are trying to anticipate answers and formulate the next Pulitzer prize winning question, that they can miss profound insights that come from what the participants are saying. If they can off load some of the cognition by having an aid – that is great.*
> *The cognitive aid should also say "**be present – listen to the participants. It is okay not to address every single thing in debriefing as it is usually not a one time event**."*

Ann Mullen offered a comparison between achieving mastery in clinical examination and in debriefing :

> *"I think that this could be compared to a clinician learning to do a history and physical exam. In the beginning, we rely on tools and cognitive aides, and with experience and feedback, we know how to do that with little mental effort. Debriefers need clear learning objectives, a vision of ideal performance and cognitive aides to support them. Just as a preceptor gives feedback to a trainee, debriefers need to have ongoing support while they hone their debriefing skills."*

Experts and Beginners identify different types of extraneous load.

A number of experts identified challenges their trainees experience, but then identified somewhat different challenges for themselves. While beginners were concerned primarily with debrief structure, technology issues, question formation and their own level of expertise, the experts described concerns about dealing with emotion, departmental politics, the flow of the course as a whole and establishing meaningful rapport with participants.

Sarah Janssens described one experience :

> *"As I read this with a glass of wine in hand after a long day of the first version of our new programme, it touches on so many aspects of my day. The intrinsic load was high due to the unfamiliar scenarios (even though I wrote many of them!), implementation of RCDP scenarios and not being able to anticipate the usual participant performance. With the extrinsic load of "managing the day", onboarding other faculty, and considering content revision, it's not surprising to me that, on reflection, I didn't once today think about how I could improve myself as an educator."*

Thanks again, for a lovely month, Ben Symon.

Acknowledgements :

Thank you to Jack Matulich for his expert commentary this month.
Thank you to all commenters this month for sharing your thoughts and allowing us to learn from you.
Simulcast would like to thank the creators of the ALiEM MEDiC series for the inspiration for the journal club's blog format and their ongoing support and contributions to the project.

References :

1. Fraser, K., Meguerdichian, M., Haws, J., Grant, V., Bajaj, K. and Cheng, A. (2018). Cognitive Load Theory for debriefing simulations: implications for faculty development. *Advances in Simulation*, 3(1).