PUTTING THE BUDDHISM/SCIENCE DIALOGUE ON A NEW FOOTING

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Reconstructing and Deconstructing the Self: Psychological Mechanisms in Different Families of Meditation

MANGALAM RESEARCH CENTER FOR BUDDHIST LANGUAGES

Reconstructing and Deconstructing the Self: Psychological Mechanisms in Three Families of Meditation

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Dahl explained his intent to share the approach of the multi-disciplinary Center for Healthy Minds and their experience of investigating contemplative practices. Given the strong emphasis on mindfulness and MBSR in other research, the Center has been interested in studying a broader range of meditation practices. Part of their work has been mapping the train of different families of practice.

He identified three categories that group common threads of practice across religious contemplative traditions, as well as contemporary humanistic traditions such as psychotherapy and and healthcare:

- Practices that are constructed around identifying and strengthening a virtue that contributes to human flourishing—where the enacting or embodiment of that trait is the practice.
- Practices related to wisdom and insight, deeply exploring such phenomena as the nature of perception, of consciousness, or of interpersonal relationships, and working from one's own felt experience rather than theoretical knowledge.
- Practices that exercise awareness and attention, and which are often used to bolster other categories of practices.

To study these practices, the Center needed a basis of understanding that involved looking at them mechanistically: What are their components and what are the processes through which they might impact different aspects of flourishing? They also needed a training paradigm, so that practices could be studied as interventions rather than relying on the reports of long-term practitioners. Dahl noted that one reason mindfulness had been so widely studied was because MBSR had provided a simple, standardized program that was widely taught.

Dahl then gave examples of some common factors that could be examined as variables across the three types of practices. One is the perspective you bring to your practice: whether you see it as an antidote to problems, such as countering anger; or framed as a discovery model where you would explore the experience of anger in ways that potentially change its enactment and lead to more positive outcomes; or a transformation model that takes a middle ground between antidote and discovery. He noted that these factors come from the classical framework of Buddhist tradition. There is a potential influence on cognitive stance that comes from learning about the practices even without actively practicing—an actual cognitive shift that is different from informational understanding—and which may act in synergy with practice. Altering one's cognitive stance may be an explicit, or even central, part of the practice, or it may occur implicitly.

Intention and motivation are other relevant factors. Intention involves maintaining awareness of the task set and becoming familiar with it, separate activities that overlap in the Tibetan term *dran pa,* literally "to remember", which is translated as meditation or

mindfulness. Clifford Saron questioned whether this also overlaps with motivation, as meditation instructions may advise holding one's motivation constantly in memory. Dahl observed that the function of *dran pa* varies widely between different types of meditation, and that it may serve as a key to initiate procedural memory rather than declarative knowledge.

Kalina Christoff observed that intentional task sets are closely related to working memory, which maintains task sets on multiple levels, including very specific and concrete (such as paying attention to the breath) as well as broader, higher level representations of tasks. There is also overlap between working memory and awareness, where the specific, concrete tasks compete for the space of attention, while a broader intentional task set may be maintained simultaneously. While working memory is very limited, the skills and procedural memory it references are transformed into unlimited long term memory. Ken Paller added that the task set becomes compressed with practice, requiring less effort to access, and Dahl noted the relationship of this to the portability of a task set—how with practice it can be more easily integrated in different life circumstances. Brandon King noted that the hard distinction between procedural and declarative knowledge had been criticized by Jason Stanley and John Krakauer, arguing that expert procedural skills are also richly cognitive. Elena Antonova pointed to the importance of interoceptive awareness and feedback during meditation, which she saw as distinct from strictly procedural skills. Paller countered that while procedural skills were studied in the lab in isolation, in real life they are always bound up in complex interactions between different memory systems. Christoff pointed out that while motor skills have been well studied, our neuroscientific understanding of cognitive skills— particularly higher level cognitive skills—is much more limited, and that contemplative science might suggest strategies for research. A particular blind spot in science that meditation practices give attention to is how thoughts are linked dynamically, comparable to the linking of motor actions in a complex motor skill. Frank Schuman related the discussion of skills to his own work on attentional control in the training of body practices, where he sees experts becoming extremely skilled at sensing context and reacting in a controlled way.

Continuing, Dahl noted that within the category of intention, context—such as aesthetics of the setting—and explicit technique are also factors. Motivation may be explicitly articulated or implicit in the atmosphere of a particular tradition. It may be proximal or distal, ranging from improving technique to soteriological goals. Showing an anonymous quotation on practice instructions which he had stripped of any religious references, and then the original quotation from St. François de Sales, Dahl questioned what complex factors of motivations were lost in the removal of context.

He then moved on to ways of categorizing families of practice by the nature of the experiences emphasized—attentional, constructive (cultivating traits), or deconstructive (exploring, investigating, analyzing)—as distinct and orthogonal from the modes of training in those practices, such as sitting meditation, relational practices, or physical movement. Dahl was particularly interested in how interpersonal dynamics might affect the experience and efficacy of a practice: for example how practices done in the context of a group or relational compassion-based practices might differ from similar practices done in isolation.

In the attentional families of practice, a common thread is meta-awareness, whether of physiological processes, thoughts and emotions, or perception. Dahl offered a metaphor for meta-awareness: "being aware of watching the movie," and suggested a variety of possible ways to "play with the dynamics of attention within that workspace of meta-awareness." One could intentionally cultivate empathy for the characters on screen, bring attention to one's body, release attentional control, and narrow or widen the aperture of attention.

Michael Lifshitz questioned whether meta-awareness was meaningful when used as an umbrella term covering cognitive monitoring, body awareness, and other experiences. Dahl admitted that this is an active topic of conversation without consensus, and that different aspects of meta-awareness may be reflected differently in brain networks. He further analysed meta-awareness in terms of attentional aperture, orientation, and effort. He made a distinction between focused attention practices and open monitoring practices such as "choice-less awareness," which releases attentional control to avoid focusing on any one particular object. He also distinguished subject-oriented practices that focus on the experiential quality of awareness itself rather than an external object. He noted that the different orientation of these categories showed that it was problematic to study "long-term meditators" as an undifferentiated group. If you wanted to measure whether meditation strengthens interoceptive abilities, specific meditation practices would lead to widely varied results.

King offered a distinction between different definitions of attentional aperture that often get conflated: narrow focus in the moment (as opposed to a broad gist perception) differs from dynamically narrow focus on the same object over time. Dahl saw this as more a question of attentional orientation than aperture, while Saron explained that the state-space model (covered in his own presentation) explicitly left time out so that the heuristic could apply in different dimensions.

Martijn Van Beek proposed looking at the meta-awareness that occurs around transition states when recognizing that one has become distracted. Meditators often identify such moments initially through somatic feelings, but many other aspects of awareness are dynamically involved, some very briefly.

Antonova questioned why the term "open presence" had been dropped from Dahl's model (and other literature). He explained that the term originated with a very specific Dzogchen practice that was more in the deconstructive family of insight practices than attentional practices. David Germano disagreed with this classification and suggested that the confusion around this practice and many others in the Tibetan literature, where it is not clear whether the text is a phenomenological description or has another purpose, is an area where collaboration between Buddhist scholars and cognitive scientists could be productive.

Claire Petitmengin queried how the categories Dahl had offered might be validated or invalidated, given the importance of consensual categories of experience to the work of microphenomenology, and to bridging Buddhism and science. Advancing the field would need to go beyond relying on traditional literature or the reports of advanced meditators. Saron also commented that the state-space model was a response to the inadequacy of traditional formulations, being just one possible approach that could reveal clusters of data leading to new ontologies that do not lean on traditional authority.

Continuing with an analysis of how meta-awareness fits in the constructive family of practices, Dahl gave examples of perspective-taking (e.g. awareness of one's own mortality from the perspective of one's deathbed) and reappraisal (e.g. changing the tenor of a negative relationship by envisioning the other person's positive relationships with their friends and family). He observed that these examples bring an active stance to meta-awareness with the intention of strengthening specific values and ethical frameworks. Deity yoga might also be seen as an example of constructive perspective-taking, where the meditator assumes the persona of an enlightened being to re-frame their own experience and environment. Saron stressed that the soteriological motivation of practices in a traditional context could be a life-changing factor that remains hidden from researchers.

Dahl acknowledged the effect of language and how the rhetoric of different traditions shapes the meditative experience, for example orienting in subtle ways to a constructive or innatist perspective. Michael Sheehy noted that the technical descriptive language a researcher uses to describe an experience should differ from the language a meditation teacher uses to elicit an experience, even if they refer to the same experience.

Dahl then turned briefly to the deconstructive family of practices that focus on a deep exploration of experience, which can be initiated through discursive, logical analysis or through experiential inquiry, which he characterized as a probing and exploratory observation of mental processes. Such inquiry may be object-oriented, subject-oriented (focused on the process rather than the content of experience), or non-dual in orientation. There has been very little scientific attention to this family of practices.

David Germano challenged the categorization, noting that Dzogchen does not fit at all into this schema, being neither deconstructive nor constructive in the senses that Dahl had defined but instead eliciting the experience of *rigpa*. Dahl acknowledged that the current map was flawed, and Christoff expressed hope that it nevertheless crystalized a productive next step for researchers to engage with the complexity of the traditional practices. She suggested that references to subject- and object-orientation might be more accessibly framed for neuroscientists as process orientation and state orientation, but that non-dual orientation was the most difficult concept to convey in the language of cognitive science. Germano noted that non-dual meditation was largely concerned with imagination and aesthetics, two factors missing from the current analysis. Dahl concluded with the need to think strategically about addressing the complexity of traditional material in stages, progressing gradually toward more subtlety. Christoff mentioned a distinction that Germano had introduced earlier between effortful and effortless practice as a potentially fruitful point of contact with science in this context.