

Examining the Partially Completed Crossword Puzzle

The Nature and Status of Contextual Behavioral Science

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The purpose of this volume is to describe contextual behavioral science (CBS) – its nature, origins, status, and future. The parts of the handbook deal in succession with its foundational assumptions and strategies, basic work in language and cognition, contextual approaches to clinical interventions and assessment, and extensions of CBS across settings and populations. Although presented sequentially, the chapters are deliberately interwoven: Philosophical issues arise in the basic science chapters, basic science issues appear in the intervention chapters, and so on. They form a kind of intellectual and practical web or network (thus the term “reticulated” for the overall strategy) that taken as a whole describes CBS and its current status, as well as providing some good hints about where this tradition may be going.

It is in the nature of books that topics need to be presented in a linear fashion. CBS did not develop that way in a historical sense, however. For example, the work on functional contextualism did not precede the work on relational frame theory (RFT), which then preceded the development of acceptance and commitment therapy (ACT). CBS rather developed more the way one might attack a complex crossword puzzle – sometimes successfully pursuing clues in one part of the puzzle led to hints for how to move forward in other parts; sometimes advancements were made in a corner of the puzzle that would be disconnected from anything else for a long time. Sometimes these leaps and jumps were strategic; sometimes they were more like a random walk, driven by whim and circumstance. But always the goal was the overall puzzle: How to create a behavioral science more worthy of the challenge of the human condition.

A puzzle of that kind is one that in all likelihood will challenge behavioral science for centuries, so although progress has clearly been made, even over a few decades, what CBS is deliberately focused on is how to create a knowledge development strategy that is sustainable and progressive over the long haul. What CBS brings to the table is a principle-focused, communitarian strategy of reticulated scientific and practical development, grounded in functional contextualistic philosophical assumptions,

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and applied at all levels of analysis in behavioral science. This vision builds on the historical fact that CBS gradually gathered together different kinds of professionals who were pursuing clues in one part of the puzzle with an eye toward what it suggested for how to advance in other parts. What once was an implicit strategy driven merely by breadth of interests has blossomed into a more conscious strategy of constructing a coherent intellectual and practical web of knowledge by proceeding in an interrelated and communitarian way all at once. Having a web of knowledge as a scientific product is what all forms of behavioral science aspire to, but CBS has adopted that end point as an analytic approach at the operational level, challenging all of the professionals involved to be always responsible for the whole of it when approached within common functional contextualistic assumptions. That is the deeper sense in which CBS is a communitarian and contextualistic *strategy* of reticulated scientific and practical development.

The CBS approach is quite different than a bottom-up strategy, in which basic scientists alone are given all of the duties of constructing principles of high precision and scope that can be applied by practitioners to complex human behavior. It is also different than technological applied work that leaps into the evaluation of applied ideas without a concern for basic principles or the scope of theories. That is one of the major differences between CBS and purely technologically oriented approaches. In a CBS approach, clinicians sometimes need to be responsible themselves for developing psychological principles, and “bench” scientists sometimes need to be responsible for learning how to apply the principles they have derived. This occurs both in the laboratories and the clinics of those who straddle that applied/basic divide, and across the crossword puzzle of content domains. Clinicians are working on social stigma or the empowerment of indigenous peoples; educators are working on relational fluency and the development of intellect; therapists are working on prevention or extending the flexibility of organizations; basic scientists are writing about evolutionary epistemology or are extending implicit measures to clinics. Over time that approach seems to be expanding the CBS community itself, not just in terms of size, where its growth has been rapid, but also in terms of its focus and professional interconnections. Cognitive scientists and evolutionary biologists are part of the CBS community, for example, and their students and colleagues are being drawn into the same communitarian approach. The list of professions, disciplines, and groups heavily involved in CBS is already long and continues to grow: social workers, psychiatrists, occupational therapists, nurses, prevention scientists, coaches, behavior analysts, educators. Development is broad at the level of language communities and nations as well, bringing new sensitivities and a diversity of topics driven by culture, intellectual traditions, and social needs. About half of the current members of the Association for Contextual Behavioral Science are outside of North America, 20 chapters exist for countries outside of the United States, and 26 special interest groups pursue issues across the full range of behavioral science topics.

Now that a substantial body of interrelated work exists, it may seem to have emerged, in retrospect, from a coherent and predictable process. Students especially should not be deceived. Science is not only nonlinear, it is not predictable. Science is the behavior of scientists and as such it is sometimes systematic and is at other times an unsystematic social enterprise. It is ultimately self-organizing based on its purpose and knowledge criteria, but it is also constantly devolving and beginning anew. There is no reason to think that this naturally unsystematic or, at times, even chaotic quality

will, or should, change. Simply because a body of work exists does not mean that it is finished, or that it could have only have turned out that way, or that developers had this end in mind all along.

Advancing an existing body of work requires the same kinds of risks and leaps that were required in its creation. Students may imagine or even be told that their scientific forbears knew what they were doing, saw a future, and then pursued it systematically. This can be a very inspiring story when it is applied to scientific heroes, but it is a secretly discouraging narrative because students in general do not see into the future and they often wait in vain for the touch of the muses they have been told visited their mentors. There is no such division between academic and practitioner generations – the apparent difference is an illusion imposed by the asymmetry of the impact of the known past versus unknown future on verbal processes. The purposive tales that surround established bodies of work are mostly reconstructions and reinterpretations, integrated into a coherent account that downplays or even hides from view the social, emotional, or accidental sources of progress that characterized the development of the tradition in real time.

CBS has moved forward not just by scientific studies and findings, and logical extensions of theories and principles, but also by personal commitments, leaps of intuition, friendships and alliances, the yearning to be of use, and by the “egos” of individual scientists, who, like most humans, seek to be heard and proven right in some way. While a mere verbal warning is unlikely to stem the tendency for scientific and clinical traditions to devolve into the safety of social agreement, we do not want this moment to pass without pleading with young scientists especially to accept nothing on faith. We would also urge them to politely refuse the appeals of the establishment to take anything as a given or as obvious, and thus as something that needs to be agreed to without further consideration. It does not matter if the establishment making this appeal is cognitively oriented or behaviorally oriented; psychological or biological in its approach; contextualistic or mechanistic in its assumptions. It does not matter if the establishment includes the very authors of this book. Doubt everything and hold it lightly – even doubt itself. Let CBS grow and change based on its successes, but be careful of adaptive peaks that could prevent this field from continuing to push toward its ultimate goals. The young, and others willing to take risks, will push this field forward, but not if they are turned into applauders or passive recipients of knowledge.

This book has a clear organization – which we will describe while that warning is fresh in our minds. In Part I of the book, edited primarily by Steven C. Hayes, we explore the idea that CBS is a strategy of scientific development, that is based on a core set of philosophical assumptions, and that is nested within multidimensional, multilevel evolution science as a contextual view of life. Chapter 3 (Levin, Twohig, & Smith), provides an overview of CBS; chapter 4 (Biglan & Hayes) provides a similarly broad summary for functional contextualism. Chapter 5 (Wilson) deals with the variety of terms and principles in a CBS approach, cautioning against the tendency for scientists and practitioners alike to reify and ontologize them. Chapter 6 (Long & Sanford) explores the reflective implications of a functional contextualistic approach for the actions of scientists themselves – essentially applying a psychological flexibility model to the doing of science itself. In chapter 7, the final chapter of Part I, Monestès examines the contribution of CBS to the study of human evolution, focusing especially on the role of human language.

In Part II, edited primarily by Dermot Barnes-Holmes, RFT is described and linked to other aspects of CBS. Hughes and D. Barnes-Holmes begin in chapter 9 by laying out the basic account and then continuing in chapter 10 to extend its implications for the study of human language and cognition as a whole. In chapter 11, Y. Barnes-Holmes, Kavanagh, and Murphy explore the implications of RFT for education and special education, and, in chapter 12, the final chapter of Part II, Törneke, Luciano, Y. Barnes-Holmes, and Bond relate RFT to the understanding and treatment of human suffering.

Part III, edited primarily by Robert D. Zettle, explores contextual approaches to clinical interventions and assessment. Chapter 14 (Herbert, Forman, & Hitchcock), provides an overview of the defining, distinguishing, and common features of contextual approaches to psychotherapy. Villatte uses RFT and CBS principles in chapter 15 to help understand the in-session actions of both therapists and clients. Chapter 16 (Ciarrochi, Zettle, Brockman, Duguid, Parker, Shadra, & Kashdan) explores a pragmatic approach to psychological assessment, extending the implications of functional contextualism to the nature and quality of measurement. Levin and Villatte consider the role of laboratory-based intervention studies and experimental psychopathology studies in a CBS approach in chapter 17. In chapter 18, the final chapter of Part III, Y. Barnes-Holmes, Hussey, McEnteggart, D. Barnes-Holmes, and Foody examine the relationship between RFT and middle-level terms in ACT.

Part IV, edited primarily by Anthony Biglan, examines extensions of CBS into a range of nonclinical topics and areas. In chapter 20, Backen Jones, Whittingham, Coyne, and Lightcap examine CBS and parenting; in chapter 21 Szabo examines CBS in education. Bond, Lloyd, Flaxman, and Archer describe the extension of ACT and the concept of psychological flexibility to the workplace in chapter 22. In chapter 23, Levin, Lillis, and Biglan consider the possibility of community-wide strategies for promoting psychological flexibility. Biglan, Lee, and Cody extend CBS thinking to the evolution of capitalism in chapter 24. In chapter 25, the final chapter of this part, Alavosius applies CBS to the environment.

Trends in CBS

This volume presents a partially completed crossword puzzle. It is one in which vast regions of the puzzle remain unaddressed. The future of CBS remains to be written, but there are a number of basic and applied topics that are beginning to be worked on now that seem imminent. In the epilogue we will look ahead as best we can, but at this point it seems most worthwhile to characterize the broad trends that will be evident as you read this volume.

At one time it was possible to think of CBS merely as an overarching term for ACT, RFT, and their relationship. Those days are quickly passing away, as this volume shows. RFT is being linked to modern work in cognitive science (DeHouwer, Barnes-Holmes, & Moors, 2013), ACT methods are being linked to principles drawn from evolution science (Wilson, Hayes, Biglan, & Embry, 2014), and a variety of evidence-based contextual interventions are being linked to psychological flexibility and other core CBS concepts (Hayes, Villatte, Levin, & Hildebrandt, 2011). RFT is guiding clinical work directly (Törneke, 2010; Villatte, Villatte, & Hayes, in press) and

psychological flexibility is being applied to larger and larger systems. We can see the beginnings of a contextual behavioral neuroscience, and a broader integration with contextual approaches to biology more generally (e.g., Barnes-Holmes et al., 2005; Fletcher, Schoendorff, & Hayes, 2010; Wilson et al., 2014). CBS is beginning to develop more contextual models of assessment and its evaluation, turning away from the elemental realist ontological assumptions that reside inside psychometric theory (Borsboom, Mellenbergh, & van Heerden, 2003) toward such methods as experience sampling (Bolger, Davis, & Rafaeli, 2003) or radically functionalist concepts such as treatment utility (Hayes, Nelson, & Jarrett, 1987). RFT is developing methods that make clearer and clearer the differences between functional and structural models of cognition, and between relational and associative models of language and cognition (Hughes, Barnes-Holmes, & DeHouwer, 2011). A good example is the maturation of the Implicit Relational Assessment Procedure (IRAP) and its underlying theory, as this volume will demonstrate. Applied methods are now springing directly from RFT concepts more broadly, not just the middle-level terms of psychological flexibility (e.g., Cassidy, Roche, & Hayes, 2011; Rehfeldt & Barnes-Holmes, 2009) – a process that seems likely to continue.

These and other trends show that CBS is broadening and deepening. Although it came from behavior analysis, it is no longer tightly tied to behavior analysis as we have known it historically, and CBS is no longer just about ACT and RFT. Instead, CBS is about putting functional contextualistic assumptions into behavioral science writ large and building the bridges to allies and fellow travelers that are needed to make progress as measured against the grand aspiration of this tradition: creating a behavioral science more adequate to the challenge of the human condition.

References

- Barnes-Holmes, D., Regan, D., Barnes-Holmes, Y., Comins, S., Walsh, D., Stewart, I., ... Dymon, S. (2005). Relating derived relations as a model of analogical reasoning: Reaction times and event related potentials. *Journal of the Experimental Analysis of Behavior*, *84*, 435–452.
- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology*, *54*, 579–616.
- Borsboom, D., Mellenbergh, G. J., & van Heerden, J. (2003). The theoretical status of latent variables. *Psychological Review*, *110*, 203–219.
- Cassidy, S., Roche, B., & Hayes, S. C. (2011). A relational frame training intervention to raise intelligence quotients: A pilot study. *The Psychological Record*, *61*, 173–198.
- DeHouwer, J., Barnes-Holmes, D., & Moors, A. (2013). What is learning? On the nature and merits of a functional definition of learning. *Psychonomic Bulletin & Review*, *20*, 631–642.
- Fletcher, L. B., Schoendorff, B., & Hayes, S. C. (2010). Searching for mindfulness in the brain: A process-oriented approach to examining the neural correlates of mindfulness. *Mindfulness*, *1*, 41–63.
- Hayes, S. C., Nelson, R. O., & Jarrett, R. (1987). Treatment utility of assessment: A functional approach to evaluating the quality of assessment. *American Psychologist*, *42*, 963–974.
- Hayes, S. C., Villatte, M., Levin, M., & Hildebrandt, M. (2011). Open, aware, and active: Contextual approaches as an emerging trend in the behavioral and cognitive therapies. *Annual Review of Clinical Psychology*, *7*, 141–168.

- Hughes, S., Barnes-Holmes, D., & DeHouwer, J. (2011). The dominance of associative theorising in implicit attitude research: Propositional and behavioral alternatives. *The Psychological Record*, *61*, 465–498.
- Rehfeldt, R. A., & Barnes-Holmes, Y. (2009). *Derived relational responding: Applications for learners with autism and other developmental disabilities*. Oakland, CA: New Harbinger.
- Törneke, N. (2010). *Learning RFT: An introduction to relational frame theory and its clinical application*. Oakland, CA: New Harbinger.
- Villatte, M., Villatte, J., & Hayes, S. C. (in press). *The language of psychotherapy*. New York: Guilford.
- Wilson, D. S., Hayes, S. C., Biglan, T., & Embry, D. (2014). Evolving the future: Toward a science of intentional change. *Behavioral and Brain Sciences*, *34*, 1–22.

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