

## Boundaries to Cybernetics becoming a Conceptual Framework and Metadiscipline in the Psychologies

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**Upshot:** Scott’s ideas of a unifying conceptual framework and metanarrative for the seemingly divergent psychology fields may be met with challenges. Four obstacles are presented, which should be addressed in order to mitigate resistance in Scott achieving his goals of cybernetics fulfilling these dual roles in the psychologise.

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### The Sidelining of Cybernetics

1. Bernard Scott (§5,15) posits two reasons for why cybernetics became side-lined during the 1970s. First, scientists used only what they deemed fit for the paradigms to which they were working within, thereafter concentrated on their own interests ignoring the roots of their specialisation and use of cybernetics. Second, funding models in the USA have favoured research geared for military exploits over research in psychology—although cybernetics was also a proponent in the military research domain. Scott (2012:75) believes that in the 1970s the “new cybernetics” literally went unnoticed in circles outside of the systems movement. Scott’s (§15) two reasons are fair; however, with more than 40-years elapsing since the heralding of the “second order”, there still remains limited explicit intermingling of cybernetics in mainstream psychology, which is exactly what Scott (§7,10) is concerned about. There is no denying that many cybernetic principles can be found dappled across the psychologies, but as Scott (§1) notes, there is almost no awareness that such principles and other evolved derivatives have originated from cybernetics. Cybernetic approaches are thus rarely found as a complete curriculum in psychology studies both in Western and European Universities. I propose four additional reasons for this status quo of the marginalising of cybernetics in psychology disciplines. I believe these obstacles are still at play and act as boundaries for Scott’s ideal of cybernetics providing both a conceptual tying together of competing psychology approaches, as well as cybernetics becoming a meta-view for psychology. Some findings from the South African context are also provided in order to balance the Americentric and Eurocentric context.

### Teacher and Learner Challenges

2. Cybernetics is challenging for students to grasp and for educators to teach (Baron, 2015). This may be due to the epistemological shifts that are usually required upon embracing cybernetics not as a model that can be objectified, described, and then applied as something separate from the observer, but both as a theory and a lived

experience, addressing both the sophia and phronesis of knowledge (Baron, 2014; Glanville, 2015). Students (and others) grapple with the idea that cybernetics may be something that can be used to frame everything else, while still being personally connected to this very frame<sup>1</sup>. Scott (§43) rightly argues that psychology education should begin with topics on autopoietic wholes and complex adaptive systems; however, would it be reasonable to expect learners to grasp these principles when they have not yet learned cognitive and social psychology? How does one present these cybernetic topics when the learners do not yet have knowledge of human mental processes, memory, and perception? Language is a major feature in cybernetics both in the manner in which much cybernetics text is written—the specificity of words, phrases, and their intended meaning—, and in the topics of cybernetics research on communication systems (Conversation Theory, for example). This is especially challenging when the learners have a different mother tongue than the teacher's, which is often the case in large multicultural universities and particularly true in the South African context. The educators and practitioners themselves would need to re-think their teaching and learning, many of which may have already become entrenched in a particular paradigm of knowledge, the same paradigms that Scott (§4) believes have not acknowledged cybernetics.

3. Educators and scientists may also find the observer dependent realities, non-purposeful drift, structural determinism and coupling, entropy/negentropy, equifinality and equipotentiality, all troubling aspects to incorporate into their research and hence their teachings. This forms the first hurdle. Thus, it may be beneficial to create a guide for educators on how to present these cybernetic topics as well as an introductory book for learners in a format that is at a low level and not intimidating (“conceptual ground-clearing” - Scott §42), such as the popular mainstream book brand *For Dummies*. The *introductory* titled book on cybernetics are Ashby's (1956) *An Introduction to Cybernetics*, and Glushkov's (1966) book with the same title, which are important texts, but may be too mathematical for a new student in the psychologies. Scott (§2) does mention that he may provide a book on the topic he proposes regarding cybernetics as a unifying framework for psychology, but being an avid researcher in education himself, he may also consider something of the order of: *Cybernetics for Dummies: A guide for Teachers and Learners*, which may also assist in overcoming the adoption of explicit cybernetics into mainstream psychology curriculums. This can also solve the problem of favouritism of some cybernetic topics where other equally valuable topics go ignored, possibly owing to their perceived complexity. Maturana and Varela (1987) did well in simplifying their

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<sup>1</sup> This statement is based on the feedback from visitors (mainly students) who have visited [www.ecosystemic-psychology.org.za](http://www.ecosystemic-psychology.org.za) This site is a resource for people who are interested in ecosystemic psychology and cybernetics in therapeutic psychology. The site traffic averages 49 page views/day.

work and opening it up to a wider audience with their book titled *The Tree of Knowledge*.

## **Traditional Universities**

4. The second barrier, not independent from the first, rests on the structure of traditional university curriculums. Scott (§26, 28) notes that psychology studies are populated with various theories and their models, which is part of the reason for Scott's quest to delineate the commonalities across the different psychology approaches in the first place. However, in keeping with the traditional university style of compartmentalising knowledge areas by separating disciplines, presenting topics independently from other topics without addressing their connections<sup>2</sup>, and often disregarding individual learning styles, many students thus also address their coursework in the same manner by learning it serially—learning to compartmentalise their coursework. This is further exacerbated when the educators specifically create assessments that ask questions in an outcomes based approach that further isolates the parts of a single curriculum, often required for the auditing bodies who want to measure the learners' performance against a pre-determined scale for each course outcome or knowledge area. Students get accustomed to the disconnect between themselves and their study areas missing the point that knowledge and knowing are not synonymous, for knowing requires a knower and is tied to context and epistemology (Glaserfeld, 1990). Thus, in the uncommon event of explicit cybernetics being a topic within a certain module of a university degree/diploma, it simply forms the next topic placed adjacent to the others in the list of knowledge areas that the learner is expected to achieve competence in<sup>3</sup>. Further, the same method of “applying” each paradigm/theory to a psychology case study, for example, now takes place with cybernetics as the tool, resulting in abundant confusion. If educators were versed in Conversation Theory as Scott (§37) describes, tools such as TeachBack, Analogy Learning, etc. could be used in a widespread fashion assisting in steering the learners, thus engaging with the different styles of learning that each learner demonstrates. However, this is particularly difficult in distance learning universities where verbal conversations are a luxury.

In undergraduate years, there may be an introductory module providing the overview of the main approaches of the last century; for example, in South African Public universities, a personology course would consist of the Depth Psychological approaches (Freud, Jung,

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<sup>2</sup> Pask (1976:101) noted this point with regards to mechanics and electricity in university curriculums.

<sup>3</sup> Pask (1976:96) was concerned about how modules are structured for students to learn serially/operationally. This topic is still relevant even 40 years later.

Adler, Fromm, Erikson), the Behavioural and Learning Theory approaches (Skinner, Rotter, Bandura, Mischel), the Person-Orientated approaches (Maslow, Rogers, Kelly, Frankl), and then lastly the Alternative approaches (Eastern, African, and Ecosystemic) (See Meyer, Moore, & Viljoen, 2008). What is notable is that the ecosystemic approach reflects the explicit cybernetic approaches and is unfortunately presented as a separate section in this particular personology module. Thus, in addressing this issue, the textbook would need to be re-written from Scott's (§1,7,10,43) view of tying the cybernetic tenants that are implicitly used within some of the neighbouring approaches concluding with cybernetics as a meta-view, instead of simply being a separate independent approach. The mega university in question is called the University of South Africa (UNISA)<sup>4</sup> which has student numbers over 300 000 and some 89 000 of these enrolments are in humanities (DoHET, 2013:4-5). Two out of the three top universities in Africa (University of Cape Town, University of the Witwatersrand, and University of Pretoria) have systems theory explicitly part of their curriculums, although with limited scope. In these two instances, the explicit use of cybernetics (first order) are within family therapy or group therapy praxis. Thus, Scott's (§29,29,44) attempt at grounding the competing psychology paradigms within cybernetics, whether process or person orientated, is not without merit, also allowing for an appreciation that many models are part of a larger class with the goal of addressing whole systems.

### **Research Methodology and Technological Efficacy**

My third proposed barrier rests on research methodology. Koch (1976:485) stated that “at the time of its inception, psychology was unique in the extent to which its institutionalisation preceded its content and its methods preceded its problems”. Empirical research is a major activity within psychology as Scott (§3,4,7,28) notes, however Scott (§42) would like it to be informed by second-order cybernetics. With abundant psychology research and what Scott (§4) refers to as “a wealth of empirical findings”, one wonders how rich this research is when mostly undertaken according to an epistemology that has not accounted for observer dependence. Becvar and Becvar (2006) call for re-research eluding to the idea that when research findings are understood from a frame of reference that does not account for its own worldview, this research should be viewed tentatively—not being so rich as initially thought. Scott (§7) mentions Critical Psychology and the attempt to review the assumptions of mainstream psychology, which is important; however, there is still a barrier in that Western thought idolises the individual and one's ability to control and manipulate his/her environment. Linear causality is central to the Western mind and the dominance of positivism prizing mechanisation and objectified measurable results, which are often the goals of funding

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<sup>4</sup> While this is an African university it reflects international Western trends in curriculum structure. This particular university is also one of the only universities on the African continent to offer their clinical master's degree from an ecosystemic approach (cybernetic), yet from browsing the undergraduate curriculums one would not assume this fact. This in turn means that only learners who achieve the master's degree would have had an opportunity to engage in a cybernetic approach to clinical psychology.

models. In terms of psychotherapy, efficacy that relies on standardisation has found its way into psychotherapy with the “manualisation” of process to provide a cheaper intervention (Soldz, 1990; Werbert, 1989). In terms of therapy practices, there is an increasing need for psychology as a profession to demonstrate that its interventions yield tangible and measureable results to clients and their families, as well as to human rights groups in light of inhumane practices of some psychiatric institutions, or abusive traditional healing practices in some low to middle-income countries (Kagee & Lund, 2012: 103; WHO, 2011). Cybernetic approaches in research methodology have the scope for an ethical approach; however, comparing success against other approaches almost requires a different set of measurement criteria, or at least an understanding of systems.

The move to technological efficacy (see Ellul, 1964) brings forth an epistemology of highly controllable, linear, predictable, and structured systems that do not readily adapt for humanness. Artificial intelligence supported by cognitive science does have a history of cybernetics as an important proponent in this endeavour as highlighted by Scott (§30). However, as Maturana (1997) stresses the term consensual in explaining existence: Consensual living; consensual emotions; consensual co-ordinations; consensual behaviours; and consensual conversations, it seems humanity in the presence of machines still has a lot to achieve for consensual existence. The structure of the majority of technology is not readily consensual. With humans at the receiving end of technology, humanity may become conditioned to what Ellul (1964:324) terms the law of technique. The deep integration of technology into the day-to-day living of people may adjusting our worldview to embrace this technology and what it brings forth: a linearity in process. It is not surprising that one of the most influential humanist psychologists noted, “In our technological society, people’s behaviour can be shaped, even without their knowledge or approval” (Rogers, 1980:140). Thus, technology too may be a barrier to embracing circular causality in research, as Westphal (2004:24) stated: “technology threatens to become the only thinking, to become the sole criterion by which we operate”.

Second order cybernetics is however an important approach to research. Some anthropologists have recently realised the importance of acknowledging research methodologies from their sister disciplines in addressing past mistakes, especially in terms of ethnographic works that arrive at conclusions that upon revisiting do not hold their ground (Lembek, 2014). This “new insight” into *new* research methodologies further depicts the lack of adoption of cybernetics in other disciplines too, now expanding Scott’s scope. One of the earliest advocates of the second order was an anthropologist—Margaret Mead. It was Mead (1968) who advocated the theorising and the doing in research should be in alignment for cybernetics to be realised. Thus, while Scott focusses on the psychologies, one wonders if his argument which he proposes is also true of other disciplines, for as Pask (1961:11) stated “Cybernetics... like applied mathematics cuts across the entrenched departments of natural science; the sky, the earth, the animals and plants. Its interdisciplinary character emerges when it considers economy not as an economist, biology not as a biologist, engines not as an engineer.”

## **Post-Modernism and Personal Preference**

The last obstacle rests on personal preference. Scott may do well to provide a coherent conceptual framework for the psychologies, but there may be an audience—as always—who choose not to acknowledge cybernetics, or dismiss it simply as a type of post-modernism. Scott (§18) would like to see cybernetics as a metadiscipline which is ideal, but how does one achieve a meta-narrative with groups of people who have not yet understood even the early cybernetic principles? This is indeed a dilemma. Second, there is a high degree of unpredictability in state-determined systems that require continuous updates for participant observers, as Scott (§16) describes citing Maturana, Pask, and von Foerster. This may not be a well-liked position for researchers to subscribe to in embracing what Scott stated (§17) as “cyberneticians had the reflexive awareness that in studying self-organising systems, they were studying themselves”. This may be an unsettling no-man’s land for scholars and students who in turn opt out of this challenging reflexive epistemological domain.

## **Conclusion**

Scott (§7) notes that if the field of psychology is looked at as a historical whole, there has not yet been any single paradigm that stands in as a dominant victor, rather competing paradigms are at play in different areas. This means there is still scope for cybernetics to “re-enter” and take a seat at the table of dominant approaches in psychology gaining its position as the metadiscipline, while also not excluding other knowledge systems such as Hua-Yen Philosophy, which too has much to offer in terms of wholeness, reference, interconnectedness, etc. (Cook, 1977). However, there are boundaries that need to be addressed in order for the step in embracing cybernetics to take place.

One turning point in psychology was the shift in thinking from information processing to meaning generating (see Anderson & Goolishian, 1988, 1990). With increasing disinformation and media programming, many people across the world have realised that information in whatever form is merely a description of one observer’s findings contextually grounded. With this point in mind, an opportunity exists to remind the world that cybernetics is fit for purpose both as a conceptual framework and as a meta-view for not just psychology and sociology, but for other disciplines too. This should pave the way for more effective communication between scholars and practitioners allowing for new research questions as Scott (§1) would like to see, at least until such time as there are no more errors in the world.

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