

***Commentary on The Unfolding Case Formulation:  
The Interplay of Description and Inference***

**Languages of Science and the Problem of Applied Clinical Knowledge:  
A Mixed Methods Appraisal of Eells' Case Formulation Research**

**DAVID J.A. EDWARDS<sup>a,b</sup>**

<sup>a</sup> Department of Psychology, Rhodes University

<sup>b</sup> Correspondence concerning this article should be addressed to David J.A. Edwards, Department of Psychology , Rhodes University, Grahamstown, 6140, South Africa.

Email: [d.edwards@ru.ac.za](mailto:d.edwards@ru.ac.za)

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**ABSTRACT**

This article is a methodological commentary on Eells' (2010) summary of his research on case formulation. It draws attention to an epistemological tension between a positivist and a qualitative/hermeneutic paradigm. I argue that the kinds of questions researchers are most concerned with in the field of case formulation are ones with direct relevance for practice and that an exclusively positivist paradigm is problematically suited to answer these, an observation that emerges from a consideration of Eells account of his research. While Eells' account of his case-based strategy is initially positivist in intent, the introduction of a hermeneutic approach opens the field up considerably. I conclude (a) that a "mixed methods" paradigm, which integratively and rigorously combines quantitative and qualitative methods and which has recently been called a "third research paradigm," offers a particularly attractive epistemological framework for planning research on case formulation that can directly guide and improve practice; and, following from this point, (b) that the meaning and direction of Eells' research can be enhanced by explicitly conceptualizing it within such a mixed methods paradigm.

*Keywords:* psychotherapy case formulation; mixed methods research; therapist responsiveness; positivist vs. interpretive methods; quantitative vs. qualitative methods; case studies

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There are large similarities between the kind of problems presented to researchers by case formulation, the focus of Eells' (2010) research, and by therapist responsiveness during treatment, the focus of my (Edwards, 2010) contribution to this *PCSP* issue. In both areas, practitioners engage in complex behaviors that involve moment-to-moment decision making in response to an ongoing flow of data in the form of the behavior of or information provided by the client. In assessment and case formulation, which Eells examines, the focus is on gathering information in order to develop an understanding of the client's problems in terms of their severity, developmental history, precipitants, and current maintaining factors, a process aptly summarized in Figure 8 of Eells' (2010) article. In my contribution to this *PCSP* issue, the focus is on the treatment phase of posttraumatic stress disorder (PTSD) and the challenge of:

implementing a treatment plan while at the same time building and safeguarding the working relationship with the client; reinforcing and enhancing the client's motivation; tailoring the treatment to the contextual aspects of the client's life; and being alert for new information that might call for revision of the formulation and treatment plan. The need to balance these different, parallel tasks naturally leads to a focus on responsiveness.

While responsiveness is not the focus of Eells' contribution to this module, he is well aware of the complexity of the task of conducting an assessment and developing a case formulation. Eells, Lombart, Kendjelic, Turner, and Lucas (2005) review cognitive science approaches to studying complex decision making tasks and in Eells' (1997; 2007a) edited book, *Handbook of Psychotherapy Case Formulation*, now into its second edition, the theme of responsiveness, which is implicitly pervasive, is made explicit in this section:

The therapist should not be rigid or wooden in an attempt to adopt a standardized approach, but, instead, should strive to be close enough to the patients' thoughts and feelings, but also sufficiently distant so as to remain a reliable instrument for assessing the patient's problems including the possible expression of these problems in the therapy relationship (Eells, 2007b, p. 16).

Historically, in order to deal with the complexity of the clinical situation in a systematic way, practitioners and practitioner/researchers have developed sets of clinical principles that can serve as a basis for guiding these skilled behaviors. However, diversity in the kinds of psychological problems presented by clients, diversity in theoretical presuppositions, and diversity with respect to psychotherapy practice, have resulted in lack of consensus about basic principles. Over the past two decades the impact of the psychotherapy integration movement has meant that currently many approaches to assessment and psychotherapy have a broader and more comprehensive basis, both in terms of theory and practice, and there has been a great deal of convergence. However, convergence is not consensus, many differences remain hard to resolve, and many researchers have not seen them as having the status of scientific knowledge.

## **RESOLVING THE SPLIT BETWEEN POSITIVIST RESEARCH AND HERMENEUTIC INQUIRY**

Academic researchers are tasked with a different job description: to investigate problems in a manner that adds rigor and provides a basis of resolving conflicts between differing theories and points of view. But rather than resolving the confusion, academic researchers have only added to it because many have seen their first allegiance to be to a positivist view of science, in terms of which valid knowledge can only be acquired through measurement, quantification, and hypothesis testing, supported by statistical analysis. This is not how clinicians build their working knowledge, and the result has been a decades-long gulf between researchers (of this sort) and practitioners (Edwards, Dattilio, & Bromley, 2004; Dattilio, Edwards, & Fishman, in press). Positivism comes with its own set of assumptions and its own language, a language within which those assumptions are deeply embedded. Research reported within the discourse of positivism seems to exert a kind of mesmeric power over readers in that its embedded assumptions are implicitly presented and accepted as definitive truth, and problems created by

the epistemological limitations of positivism are projected on to the phenomena being investigated (Edwards, 2007).

An alternative, more flexible view of science places greater value on naturalistic inquiry, gives qualitative data a major role, and recognizes that the researcher's interpretation of the phenomena studied will inevitably be a part of the research process and cannot be entirely bypassed by methods designed to ensure objectivity. It also recognizes that while rigor is important, there will be situations where evidence will not be conclusive but that knowledge for which there is good evidence is better than no knowledge at all. This epistemological approach was always widely used in the social sciences until it was largely displaced by approaches shaped by positivism (Mitchell, 1983). Sociologists Glaser and Strauss (1967), who gave it the name "grounded theory," were pioneers of the process of rehabilitating qualitative research methods in the face of the onslaught of positivism and in the decades since have been part of a renaissance of qualitative enquiry (Cresswell, 1998; Kvale, 1996; Miles & Huberman, 1994; Patton, 2002; Packer & Addison, 1989; Reason, 1988; Smith, 2003). These qualitative methods have the same epistemological basis as the way in which much clinical theory is built, and include processes to enhance the validity of knowledge developed in this way.

Yet there is an epistemological problem. The positivist and qualitative/hermeneutic paradigms each "have a different view of reality and therefore a different view of the phenomenon under study" (Sale, Lohfeld, & Brazil, 2002, p. 43). However, this problem is not new. In studying levers, Archimedes (287 BCE - 212 BCE) realized that there is no such thing as an absolute fixed point, expressed in his famous "give me a place to stand and I shall move the earth" (Archimedes, 2010). Decades ago, physicists wrestled with the same kind of problem because of the paradoxical nature of light, which can sometimes appear as a wave and at others as a stream of photons, depending on the nature of the experiment that is performed. As Einstein and Infeld (1938, pp. 262-263) observed,

It seems as though we must use sometimes the one theory and sometimes the other, while at times we may use either. We have two contradictory pictures of reality; separately neither of them fully explains the phenomena of light, but together they do.

This pragmatism is increasingly being embraced in the social sciences as the complementary nature of the two epistemological approaches is recognized and it has become clear that neither alone can provide the kind of knowledge that is needed to ensure an effective practice (Hanson, Creswell, Clark, Petska, & Creswell, 2005; Edwards et al, 2004; Dattilio et al, in press). The positivist approach can provide strict tests of hypotheses, which is a valuable means of ensuring that exaggerated claims are open to refutation. However, this approach sets such stringent conditions for determining how valid knowledge can be attained that many researchers devote so much time and energy to measurement and the development of replicable procedures that the subtleties and complexities of the phenomena they are investigating get lost. Furthermore, a large number of important claims cannot be tested by these methods (either for practical or economic reasons), and another serious drawback is that the approach tends to deliver very general principles that cannot easily be applied in specific contexts. The naturalistic/hermeneutic approach, using qualitative methods, can examine complex, naturally

occurring phenomena (such as those that are the focus of this *PCSP* issue) and can develop principles of contextual knowledge (Flyvbjerg, 2006). However, it is more difficult to resolve differences of opinion between researchers with respect to the conclusions that can be drawn.

If these broad approaches are seen as offering different strategies for enhancing the quality of knowledge in terms of its validity (positivist) or trustworthiness (qualitative/naturalistic) (Lincoln, 2002; Morrow, 2005), each can contribute to the advancement of knowledge within a domain of complex practice such as assessment and treatment in clinical psychology. This is the claim of the mixed methods paradigm which is establishing itself as a "third research paradigm" (Johnson & Onwuegbuzie, 2004, p. 14), and creating a "third research community" (Teddlie & Tashakorrie, 2009, p. 3). Ideologically, the mixed methods approach is based on pragmatism, a philosophy so central to *PCSP* that it is enshrined in the name of the journal. The project of *PCSP* is to raise the profile of research that is case-based by standing up for the fundamental contribution to clinical knowledge that is made by the careful, qualitative examination of the phenomenology of case material (Fishman, 2005). There is recognition that quantification can play a valuable role in, for example, determining the degree of specific symptoms or problem behaviors that are the target of a psychotherapy intervention, and that experimental manipulations within cases—using designs chosen to enhance internal validity—can improve the quality of conclusions that can be drawn. However, neither of these benefits of quantification are necessary for meaningful conclusions to be drawn. Without this pragmatism, a rarefied view of science defined by positivist principles offers restrictive definitions of what can count as scientific knowledge. This slows down the development of practical knowledge and, by setting knowledge development apart from practice, creates a rift between science and practice, and directs attention away from real world problems that are too complex to quantify or code (Dattilio et al, in press).

## **EELLS' RESEARCH ON CASE FORMULATION: AN EPISTEMOLOGICAL ANALYSIS**

This might seem like a long preamble to an analysis and discussion of Eells' (2010) article in this *PCSP* issue presenting his work on case formulation. But it provides a framework for reflecting on how Eells navigates the split between epistemologies. To some extent he does so by living parallel lives. His article is largely written within a positivist discourse. Yet, a look into his edited book, *Handbook of Case Formulation* (2007a), quickly shows that he comfortably inhabits both worlds, and I hope to show how, in the present article, he moves between one epistemological framework and the other. I will draw out this theme by considering three stages in Eells' (2010) article: the group comparison stage, the "analyze then aggregate" stage, and the plan for further research stage.

### ***Phase 1: Group Comparisons***

Eells speaks the language of positivist research with fluency, and his first study uses a classic group comparison methodology with the aim of comparing mean scores of different groups of participants—experienced experts, experienced nonexperts, and novices (psychology graduate students relatively early in training trainees)—on measures that have been carefully

validated. This phase demonstrates a great deal of resourcefulness and sheer hard work on the part of Eells and his research team. In the first study the main findings were that (a) overall, "experts produce higher quality formulations than experienced non-experts and novices, and they also produced more description, diagnostic information, inferences, and treatment planning ideas than the other two groups" (Eells, 2010, p. 228); but that (b) within groups, there was considerable variability, particularly among the experienced non-expert therapists, many of whom performed more poorly than trainees, and even some of the expert group performed quite poorly, especially among the psychodynamic therapists. In the second study, "all groups showed evidence of forward and backward reasoning, with some evidence suggesting that this pattern of reasoning characterized the expert therapists more than the other groups" (Eells, 2010, p. 228). These formal findings are interesting, but given the amount of effort expended, quite modest. Moreover, they belie the richness of the conceptual work done by Eells and his team on the structure of case formulations and the nature of expertise, conceptual work that is difficult to exploit to the full extent within a group comparison methodology.

### *The Limits of an Analogue Study*

Another important limitation of the Eells studies just summarized is that what is being studied is not clinicians formulating cases, but rather an analogue task of vastly reduced proportions. Eells et al. (2005) do briefly acknowledge this, but in my view do not do justice to the implications for interpretation of their findings. Analogue tasks have the advantage of giving researchers control over variables that can be measured and reducing the impact of some extraneous factors. However, they have the major disadvantage that they are not the real thing which, in positivist language, can limit the external validity of findings. So it is worth looking at the differences between case formulation as it takes place in Eells' experimental situation and how it differs from the formulation of real cases in the consulting room.

Eells et al.'s (2005) participants based their formulations on six separate vignettes of around 400 words that were read aloud, a process which took about two minutes. Immediately after hearing each vignette they were asked to "think aloud about your conceptualization of the patient. . . [to] construct a case formulation . . . as best you can, addressing whatever you feel is important" (p. 582). After five minutes they were asked to "think aloud about how you would treat the patient in psychotherapy," a process for which a further two minutes were allowed. Participants' verbalizations during these six by seven minute periods constituted the main data for the study.

The task is more like that presented by an informal clinical case discussion, a context which is notorious for eliciting speculative and competitive responses from participants and there several important ways in which it differs from case formulation in a real case. Some of the most obvious are that practitioners:

- do not have access to the kind of comprehensive range of information that would be typically available in a psychological assessment;
- cannot use further questioning to go after information they would consider useful.

- do not have to/are not able to engage in a relationship with the client;
- do not have any information of the kind that they would have through interacting with the client;
- have no time to reflect on the material or allow background processing to throw up perspectives that might not be immediately available;
- are not able to consult the professional literature; and
- might, because of the test-like nature of the task, be hooked into a test-taking set within which they seek to impress the researcher or feel anxious about their performance.

As Eells et al. (2005) point out, use of a simplified analogue task had at least two advantages: it allowed for a more complex study design in that each participant formulated 6 separate case vignettes; and having a short task also allowed for a large number of participants, which provided statistical power to the group comparisons. However, these advantages from a positivist point of view are not "substance neutral," but rather can lead to a dangerous pull away from the practical relevance of what is being studied. In other words, the search for an elegant and workable design draws researchers away from the real world and a price is paid: since the situation being studied is quite far removed from the real clinical situation, there needs to be considerable caution in generalizing conclusions to what actually happens in practice.

### ***Phase 2: "Analyze Then Aggregate"***

To get beyond the limitations of group comparison research, Eells turns to an "analyze then aggregate" approach and looks at the responses of individual participants. This begins with a positivist strategy, the  $n=1$  design (Barker, Pistrang, & Elliot, 2002), which includes the presentation of cumulative frequency graphs (see Figures 4-7 in Eells, 2010).

On one hand, the results of Eells' frequency graphs themselves are an elegant revelation of patterns within individual cases, and differences between cases. But more specifically, what do these patterns mean? B.F. Skinner's cumulative frequency graphs were also elegant and enabled him to show patterns in the acquisition of conditioned behaviors. But these behaviors were quite simple, often as simple as a bar press by a laboratory rat. Such graphs may or may not be useful when applied to very complex human behaviors such as psychotherapists' case formulations. Herbert Simon, whose work Eells draws on, used a more pragmatic approach in his studies of human tasks such as problem-solving and playing chess, which are much more on a par with case formulation in terms of complexity. He asked participants to think aloud so as to make explicit their thinking processes and used the information to make models of the process of decision making that could be modeled by computer programs. This did not involve quantification, coding, or graphs at all. Similarly, Eells now switches to a qualitative research strategy, giving us verbatim segments from the transcripts and commenting thematically on their meaning and implications.

Suddenly, for readers, the process comes to life, as Eells offers his perspicacious insights into the nature and processes of case formulation as exemplified in the segment. For Eells too, phenomena that had been concealed behind the barrier of abstract coding emerge into the clear light of day:

What was not apparent from the group-based approach was how close to clinical case material the expert formulators stayed as they developed inferences and ultimately offered a core problem to focus on in therapy. In contrast, the more ordinary formulations tended to be more general and vague, and to offer inferences without having established a solid foundation in the case material. Alternatively, they leapt past that material and proceeded to a treatment plan. The analyze-then-aggregate approach also showed that contextualizing the quantitative material by examining the text of the case formulation added considerably to understanding the case formulation process (Eells, 2010, p. 237).

However, it is not the shift to an analyze-then-aggregate strategy alone that is responsible for this, but the shift to a qualitative/interpretative approach that allows Eells' own expertise and experience to show through.

Another epistemological challenge concerns the nature of aggregation. How can knowledge gained from examination of individual cases be aggregated to produce a body of knowledge? Here positivism and qualitative approaches give different answers. For positivism aggregation means identifying different patterns in cases and observing the range and frequencies of these patterns and other variables with which they may be mathematically associated. For qualitative research, it means building a narrative structure of processes and interrelationships that contains many sentences with an "if ... then ..." format. This is the kind of knowledge that is embodied in the principles of case formulation featured in Eells' (2007a) *Handbook of Psychotherapy Case Formulation*, and in his model of case formulation in the current *PCSP* article summarized in his Figure 8. However, qualitative researchers would probably not want to call this "aggregation," since it is a process of conceptual building, elaborating, and refining that is not fundamentally a quantitative process. It is what Glaser and Strauss (1967) called the discovery of "grounded theory," and Bromley (1986) calls the development of "case law."

### ***Phase 3: Developing a Case Formulation Competence Scale***

In phase 3, Eells sets out a research program for the development of a scale for evaluating competence in formulating cases. Here his research approach is also largely qualitative and interpretative, based on the model he presents, which is the product of qualitative, not quantitative research. While his aim is to develop categories that can be rated on Likert scales, his analysis of the steps of the formulation process and of the aspects that need to be evaluated is based on a thematic and structural analysis of the process of case formulation as developed by clinicians and about which there is a great deal of consensus across approaches to psychotherapy. Eells' conceptual model, summarized in Figure 8 of his article (Eells, 2010), can be viewed in a mixed method way of thinking, as a framework for incorporating a variety of research findings in the field—group-based and case-based, quantitative and qualitative—into an integrated

framework to guide best practice in the arenas of assessment, formulation, treatment planning, treatment process, and evaluation of effective psychotherapy.

Indeed, while conducting his formal research within the constraints of positivism, Eells (2010) also shows his interest and expertise in qualitative research. Moreover, in his *Handbook of Psychotherapy Case Formulation* (Eells, 1997; 2007a), Eells has given a great deal of attention to the knowledge that is built up out of clinical practice and to synthesizing ideas that have emerged directly from the clinical practice of others. The book draws together chapters on case formulation from some of its foremost exponents, both academically and practically, in a manner that is comprehensible and useful to clinicians. Much of the knowledge contained in the *Handbook* is the product of qualitative inquiry, sometimes explicit, but more often implicit.

### **IN PRAISE OF PRAGMATISM AND THE MIXED METHODS PARADIGM**

Science begins with observation and description. It can proceed to generating general laws, but it can also proceed in another direction altogether, to the solving of everyday problems, whether these be capping leaking oil wells under the ocean, repairing a damaged heart, or changing the personalities of people with borderline personality disorder. In these applications, general laws are of limited use without the development of grounded theory, a comprehensive set of principles that provide understanding of complex real world processes occurring in specific contexts. The mixed methods paradigm, with its pragmatic approach to knowledge, allows researchers and practitioners to exploit the strengths of each aspect.

Viewed from a mixed methods perspective, case formulation is well advanced as a scientifically based activity. A great deal of the principles presented in Eells' *Handbook* have a scientific basis in rigorously analyzed, systematic, qualitative data, even if there are no strictly positivist research findings to back them up. Furthermore, the paradigm provides a more flexible framework for researching those aspects of case formulation that Eells is clearly most interested in, and which are so difficult to investigate using positivist strategies. These are expressed in the title of his article: the subtle and complex cognitive processes that go into the building of a case formulation, something that takes place through time as an "unfolding" and includes aspects such as the "interplay of description and inference."

As Johnson and Onwuegbuzie (2004, p. 14) argue, the mixed methods approach is "a research paradigm whose time has come" because it enables the kind of pragmatism that gives rise to the creative synergy of research approaches in which Eells is engaged. Without such a mixed methods approach, however, clinical researchers may find themselves performing a difficult balancing act as they address real world clinical problems while having to look over their shoulders at the demands made by narrowly positivist critics whose principles prevent them from meaningfully addressing the very real concerns raised by clinical practice.



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