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The Philosophical Underpinnings of the Enhanced Critical Incident Technique
Les fondements philosophiques de la technique améliorée d'analyse d'incident critique

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ABSTRACT
Since its introduction in 1954, the critical incident technique (CIT) has been modified for use within counselling psychology and undergone several contemporary enhancements. While the method's procedures and history have been described thoroughly, its philosophical underpinnings have not. This article seeks to fill this gap by contrasting the most current iteration of the CIT (i.e., the enhanced critical incident technique, or ECIT) across the philosophy of science paradigms. The ECIT is found to contain specific and rigorous post-positive epistemological elements and a flexible ontological position. This makes the ECIT a malleable method that can meet the needs of researchers from multiple perspectives.

RÉSUMÉ
Depuis son introduction en 1954, la technique d'analyse d'incident critique (TAIC) a été modifiée pour pouvoir être utilisée en psychologie du counseling, en profitant de plusieurs améliorations contemporaines. Bien que les procédés et l'historique de cette méthode soient bien connus, on connaît moins bien ses fondements philosophiques. L'article vise à combler cette lacune en insérant la version la plus récente de la TAIC (soit la technique améliorée d'analyse d'incident critique [TAAIC]) dans les paradigmes de la philosophie des sciences. On constate que la TAAIC comporte des éléments épistémologiques postpositifs précis et rigoureux, ainsi qu'une position ontologique flexible, ce qui en fait une méthode malléable et capable de satisfaire aux besoins des chercheurs dans de nombreuses perspectives.

The critical incident technique (CIT) is a qualitative research method introduced by Flanagan in 1954. Since its inception, the CIT has come to be regarded as a widely effective and flexible investigative research tool (Chell, 2004; Sharoff, 2008; Woolsey, 1986). It has been employed extensively within counselling psychology as well as across a wide range of disciplines (Butterfield et al., 2005), and it has undergone contemporary enhancements (Butterfield et al., 2009). Though the history of the method has been described thoroughly (Butterfield et al., 2005; Shattuck & Woods, 1994) and detailed instructions for how to conduct an enhanced version of a CIT study have been outlined (Butterfield et al., 2009; Woolsey, 1986), a discussion of the potential philosophies of science undergirding the CIT has not been published. This article seeks to fill this gap by contrasting the most current iteration of the CIT method (the enhanced critical incident technique, or ECIT) across the contemporary philosophy of science paradigms.

CIT Description and Brief History

The distinctive features of the CIT are as follows: (a) the focus is on critical events, incidents, or factors that help promote or detract from the effective performance of some activity or the experience of a specific situation or event; (b) the discipline origin is from industrial and organizational psychology; (c) data collection is primarily through interviews; (d) data analysis is conducted by determining the frame of reference, identifying critical incidents, grouping similar incidents into categories, and determining the specificity or generality to be used in reporting these categories; and (e) data are reported as categories with operational definitions and self-descriptive titles (Butterfield et al., 2005). Steps for the CIT include (a) ascertaining the general aims of the activity to be studied, (b) making plans and setting specifications, (c) data collection, (d) data analysis, and (e) data interpretations and reports on the findings (Flanagan, 1954).

The CIT was developed during the Second World War by the Aviation Psychology Program of the U.S. Armed Forces with the original purpose of selecting and classifying aircrews (Flanagan, 1954). Used initially in industrial and organizational psychology, the CIT has since grown to be utilized in a variety of disciplines (e.g., counselling psychology, nursing, psychology, education, job analysis, marketing, social work, communications, education, medicine, organizational learning, and performance appraisals) and has moved beyond behavioural observation to the study of psychological states and experiences through retrospective self-reporting (Butterfield et al., 2005; Woolsey, 1986).

In recent decades, several enhancements have been introduced to the CIT method. First, to provide background information, contextual questions have been added at the beginning of the research interview, and second, questions regarding wish list items have been added to the original helping and hindering

related questions (Butterfield & Borgen, 2005; Kemppainen, 2000). Also, extensive credibility checks have been added to increase credibility and trustworthiness (Butterfield et al., 2009). These credibility checks are as follows: (a) audio recording interviews, (b) interview fidelity, (c) independent extraction of critical incidents, (d) calculating exhaustiveness, (e) calculating participation rates, (f) placement of incidents into categories by an independent judge, (g) cross-checking by participants, (h) expert opinions, and (i) theoretical agreement (see Butterfield et al., 2009). With these additions, the CIT has been reconstituted as the enhanced critical incident technique (ECIT), and it is this enhanced method that is the focus of discussion within this article.

Method Versus Methodology

Before we discuss the philosophy of science behind the ECIT, underlining the distinction between methods and methodology may provide context. Methods have been defined as techniques, procedures, or tools of research (Harding, 1987a; Schwandt, 2000). They may be thought of as "research action" (Carter & Little, 2007, p. 1317). In contrast, methodology has been described as "the study, the description, the explanation, and the justification, of methods, and not the methods themselves" (Kaplan, 1964, p. 18), as "a theory and analysis of how research should proceed" (Harding, 1987b, p. 2), and as "analysis of the assumptions, principles, and procedures in a particular approach to inquiry" (Schwandt, 2001, p. 161).

Methodology may be thought of as the study and the justification of methods (Carter & Little, 2007). The ECIT fits as a method: the techniques, procedures, and tools for conducting research are detailed, but a description of the underlying assumptions and principles has not been presented. Still, no method is without philosophical assumptions, and selecting a method without considering the philosophical principles behind its procedures can lead to incorrect inferences and misleading conclusions (Ponterotto, 2005; Willig & Stainton-Rogers, 2010). According to the guidelines for qualitative research published by Elliott et al. (1999), researchers must own their perspective. This article seeks to make the methodological assumptions behind the use of the ECIT explicit so that researchers may make fair inferences, come to logical conclusions, and state and employ their research perspectives more consciously when utilizing the ECIT.

Philosophy of Science Paradigms

To frame the discussion of the philosophical principles underlying the ECIT method, a paradigm approach similar to one adapted from Guba and Lincoln (1994) and utilized by Ponterotto (2005) will be employed. Filstead (as cited in Ponterotto, 2005, p. 127) defined paradigm as "a set of interrelated assumptions

about the social world which provides a philosophical and conceptual framework for the organized study of that world." This paper will adopt a similar definition and discuss the following major paradigms outlined by Ponterotto (2005) as they relate to the ECIT method: positivism, post-positivism, constructivism, and critical theory (with related ideological positions).

These paradigms will be outlined according to five common philosophical anchors: ontology, epistemology, axiology, rhetorical structure, and methods. Ontology refers to the question of the nature of reality, the nature of existence, and the nature of being in the world (Crotty, 1998; Jacquette, 2002; Ponterotto, 2002). Epistemology considers how knowledge is known, how it is acquired or constructed, how it is justified, and how it is sought (Carter & Little, 2007; Hansen, 2004; Moon & Blackman, 2014). In social science research, a key epistemological consideration is the nature of the relationship between the research participant and the researcher: Do the values and biases of the researcher and the participant influence each other, and is this potential influence important (Guba & Lincoln, 1994; Ponterotto, 2005)?

Axiology refers to the role and the influence of researchers' and participants' values, assumptions, and beliefs in conducting research (Carter & Little, 2007; Ponterotto, 2005). Rhetorical structure describes the language used in communicating the details of the research study and typically matches the ontological, epistemological, and axiological perspectives taken by the researcher (Ponterotto, 2005). The rhetorical structure is significant to issues of representation of research findings and considers elements such as form, voice, and power. Methods have been defined as specific techniques, procedures, or tools of research (Harding, 1987a; Schwandt, 2000). Methods vary according to the particular frame within the paradigms of science.

Positivism

Positivism is considered the dominant and default philosophy of science throughout the natural and social sciences (Cacioppo et al., 2004; McGrath & Johnson, 2003). Positivism takes an ontological position of naive realism—that there is an objective world with a single fixed, independently knowable, and measurable reality (McGrath & Johnson, 2003; Eshlaghy et al., 2011). Epistemologically, positivism emphasizes dualism and objectivism. The researcher, the participant, and the topic are considered independent of each other (dualism), and the replication of findings makes the study objectively true (objectivism; Crotty, 1998; Scotland, 2012).

Regarding axiology in positivism, the researcher's values have no role in scientific inquiry, and controlled experimental studies allow the researcher, the participant, and the topic to remain independent of each other without bias or influence from either party (Cacioppo et al., 2004). Any biases introduced by the researcher are considered flaws within the study (McGrath & Johnson, 2003;

Ponterotto, 2005). The rhetorical structure is precise and presented objectively, with theoretical concepts translated into statements about observations (Ponterotto, 2005; Willig & Stainton-Rogers, 2010). Positivism favours methods that verify hypotheses through mathematical analysis within controlled experimental studies involving a random selection of a sample from a population of interest, and it may be used to express functional relationships, leading ultimately to the prediction and control of phenomena (Eshlaghy et al., 2011; Willig & Stainton-Rogers, 2010).

Post-Positivism

Post-positivism grew out of ontological and epistemological critiques of positivism (Cacioppo et al., 2004; Guba & Lincoln, 1994; Ponterotto, 2005). Post-positivism takes an ontological position based upon realism in that a true reality is thought to exist. Still, that reality may be only partially or imperfectly known and measured (critical realism; Eshlaghy et al., 2011). Epistemologically, post-positivism suggests a modified form of dualism and objectivism. The researcher may have some influence, but objectivity should be sought through the control of potential bias. Rather than be undoubtedly true, findings are considered likely true in most post-positivist research designs (Eshlaghy et al., 2011). However, this is not necessarily the case for all post-positivist research.

There is debate within different forms of phenomenology regarding researcher bias: In descriptive phenomenology (Giorgi, 2009), the researcher needs to bracket out all presuppositions regarding the research topic, but in interpretive phenomenology (Langdridge, 2007; J. A. Smith & Osborn, 2008), the researcher acknowledges that researcher subjectivity is part of the ways of coming to understand the phenomenon under investigation. Thus, the researcher in interpretive phenomenology does not bracket what is a priori but hones in on how one's subjectivity is at work in the knowledge produced. Post-positivist axiology and rhetorical structure are similar to positivism, but the acceptance that reality may be only imperfectly known results in changes to acceptable methods (Eshlaghy et al., 2011; Scotland, 2012).

Rather than theory verification, post-positivism focuses on theory falsification (McGrath & Johnson, 2003). Inquiry within more naturalistic settings, the inclusion of situational information, exploration in addition to experimentation, and the investigation of the meanings and purposes that individuals ascribe to actions are considered valid (Guba & Lincoln, 1994). Still, the control or acknowledgement of bias and the increased objectivity through triangulation and replication are often utilized as attempts to explore, explain, and predict universal laws that are emphasized frequently (McGrath & Johnson, 2003). In line with the modified form of objectivism utilized in post-positivism, the rhetorical structure is often the third person and personalized through the use of participant quotes.

Constructivism

Constructivist and interpretivist approaches are in stark contrast to the singular view of reality and perception presented by positivism (Cacioppo et al., 2004; Ponterotto, 2005). Ontologically, constructivist approaches suggest that rather than a single external and true reality, there exist multiple realities that can be constructed, apprehended, and rendered equally valid (relativism; Kukla, 2000; Schwandt, 1994). Reality is constructed within the mind of the individual and within the interactions between individuals and is brought forward through reflection; no one perception of that construction is more or less true, though it may be more or less informed or sophisticated (Hansen, 2004; McGrath & Johnson, 2003).

Epistemologically, constructivist approaches take a transactional and subjectivist stance. As reality is socially constructed, the interaction between researcher and participant is paramount to understanding and describing the lived experience of participants (Kukla, 2000; Schwandt, 1994). The interaction between researcher and participant assists in the deep reflection necessary to uncover meaning, which causes findings to be created as research takes place, blurring the distinction between epistemology and ontology (Sciarra, 1999). Within this axiology, the values and lived experiences of the researcher are integral to the research process (Sciarra, 1999). While researchers are encouraged to acknowledge and to bracket their values and assumptions, elimination of possible bias is improbable, as research requires an interdependence between all parties involved (Kukla, 2000; Schwandt, 1994). As such, the rhetorical structure is often in the first person and personalized (Ponterotto, 2005). The researcher's experience, expectations, biases, and values are described, and the impact of the research on the researcher is discussed along with findings. Methods are hermeneutic and dialectic, requiring longer periods of immersion in the participants' worlds (Scotland, 2012; Slevitch, 2011). Qualitative, naturalistic designs with in-depth interviewing and participant observation are common, as are a variety of arts-based methods (e.g., photovoice techniques, personal diaries or testimonials, and documentary films), in coming to a consensus construction (Crotty, 1998).

Critical Theory

The critical theory paradigm encompasses many disparate approaches (e.g., feminist theory, queer theory, critical race theory, critical discourse theory, critical disability theory, critical social theory, and postcolonial theory), with the common goal of taking the influence of researcher values one step farther than constructivist approaches through the purposeful utilization of those values in the service of emancipation, transformation, and cultural/social equity (Kincheloe & McLaren, 2011; Eshlaghy et al., 2011).

Critical ontology states that reality is influenced by social, political, and historical power relations between ethnicities, cultures, and genders, (historical

realism; Guba & Lincoln, 1994; Kincheloe & McLaren, 2011; Ponterotto, 2005). Epistemologically, a transactional, subjective, and dialectical relationship between researcher and participant is emphasized (Kincheloe & McLaren, 2011). Within this axiology, researcher values are emphasized highly. It is both desirable and expected that they would influence the researcher process and outcome, with a bias toward empowering participants to transform the status quo and to reduce oppression (Kincheloe & McLaren, 2011). The rhetorical structure is similar to the constructivist structure, with an emphasis on the first-person language and including a discussion of the researcher's experiences and values before, during, and after the research (Guba & Lincoln, 1994; Ponterotto, 2005). Research methods are dialogic and dialectical (Guba & Lincoln, 1994), with increased emphasis on participant involvement and empowerment. Observation and interviews are utilized to stimulate conversation and reflection and to challenge the status quo (Kincheloe & McLaren, 2011).

In line with the suggestion that "members of the profession enhance their understanding of research methodologies and projects done with Indigenous methodologies" made within the response from the Canadian Psychological Association (CPA) and the Psychology Foundation of Canada (PFC) to the Truth and Reconciliation Commission of Canada's report (CPA & PFC, 2018, p. 25), a general description of Indigenous research methodologies will be utilized as an example of the critical theory paradigm. Indigenous methodologies locate research within tribal epistemologies, with Indigenous ways of knowing essential to research processes and procedures (Kovach, 2018). Indigenous research adheres to decolonizing methodologies, emphasizing concern for how research is produced and distributed.

Similar to a critical realist perspective, a decolonizing approach asks if the research contributes to the oppression and colonization of Indigenous peoples (L. T. Smith, 2012). Therefore, anti-colonial Indigenous research is "initiated, directed, and controlled by Aboriginal peoples" (Max, 2005, p. 79). Indigenous research requires critical reflection about the Western gaze: "If Indigenous research is to have decolonizing aspirations, it must make one think deeply, feel strongly. It is out to unsettle" (Kovach, 2018, p. 217). Much of the research done with Indigenous peoples historically has been in aid of colonial processes and has involved the extraction and appropriation of information and knowledge from Indigenous communities (Schnarch, 2004). Indigenous methodologies are therefore informed by the four Rs of research: respect, relevance, reciprocity, and responsibility (Kirkness & Barnhardt, 1991/2016). These four principles are interrelated and enacted in relationships (Hoffman, 2013), with the researcher being accountable to "all your relations" (Wilson, 2001, p. 177).

Wilson (2001) highlighted the differences between dominant research paradigms and an Indigenous research paradigm. In dominant research paradigms, understanding knowledge is something to be gained and owned by an

individual. An Indigenous paradigm relies on the assumption that knowledge is relational and shared with all Creation. Knowledge is embedded in a relationship "with the cosmos, it is with the animals, with the plants, with the earth that we share this knowledge" (Wilson, 2001, p. 177). According to Kovach (2018), there needs to be a symbiotic relationship between Indigenous epistemology and method for the research to qualify as an Indigenous methodology, with Indigenous world views serving as the research framework.

To respect Indigenous knowledge genuinely, scholars must "internalize and actualize Aboriginal ethics in all aspects of the work" (Hoffman, 2013, p. 197). The following rhetorical questions are typically asked: "Whose research is it? Who owns it? Whose interests does it serve? Who will benefit from it? Who has designed its questions and framed its scope? Who will carry it out? Who will write it up? How will its results be disseminated?" (L. T. Smith, 2012, p. 10). For more information on Indigenous methodologies, please see the authors cited above.

Placing the ECIT Into a Philosophical Paradigm

Ontology

Ontology refers to questions about the nature of reality and the nature of being in the world (Crotty, 1998; Jacquette, 2002; Ponterotto, 2002). Ontological perspectives can be placed on a spectrum between relativism and realism (Moon & Blackman, 2014). In determining the ontological stance of the ECIT, the target of inquiry provides an indication. Flanagan's (1954) original method centred on observable behaviour, but researchers since have moved the focus to the investigation of psychological constructs and of experiences, perceptions, and beliefs (Butterfield et al., 2005; Woolsey, 1986). In response, the method of collecting data has shifted from direct observation to retrospective self-report (Butterfield et al., 2005). The original focus on observable behaviours implies a realist ontology that fits into the positivist paradigm, with an objective, independently knowable, and measurable reality under inspection. However, the shift to participants' perceptions and to retrospective self-report data sources allows for the possibility of ontological stances beyond the realist perspective held within positivism.

Participants' perceptions and their self-report regarding those perceptions are subjective and influenced by context, personal factors, and the interaction between researcher and participant. This subjectivity could be viewed as creating distortions that may be acknowledged and potentially controlled for in an attempt to get as close to objective reality as possible, as in the post-positivist paradigm. This subjectivity could be seen as inherent to the nature of relativist reality, with variations in subjective reality seen as valid, as in constructivist or critical paradigms. The ontological stance of the ECIT may therefore be either post-positivist or constructivist, depending on the intent and the beliefs of the researcher. However, should the researcher wish to endorse a constructivist ontology while using

the ECIT, they will need to discuss how this fits with the post-positivist leaning epistemology within the ECIT, detailed below.

Epistemology

Epistemology considers the nature of knowing, how knowledge is acquired and produced, and how it is justified (Carter & Little, 2007; Hansen, 2004; Moon & Blackman, 2014). In social science research, a key epistemological consideration is the nature of the relationship between the research participant and the researcher: Do the values and biases of the researcher and of the research participant influence each other, and is this potential influence important (Guba & Lincoln, 1994; Ponterotto, 2005)? Social science epistemological perspectives may be placed upon a continuum from those stating that objective reality is separate from the subject observing it to those claiming that reality is constructed between or imposed by the relationship between subject and object (Crotty, 1998; Moon & Blackman, 2014).

ECIT interviewing techniques and interview fidelity checks may be placed along this continuum. Interview guidelines stipulate that interviewers should undergo interview training, following closely an interview guide that provides a framework for the interview. Every third or fourth interview should be checked by an ECIT expert (Butterfield et al., 2009). An objective of the ECIT interview is "to explore the same content areas at the same level of detail with all participants" (Butterfield et al., 2009, p. 270). This maintenance of rigour in the interview approach may be perceived as an attempt to remove some of the effects that the interviewer may have on the data collected, suggesting that the interaction between interviewer and participant has the potential to colour the results in an undesirable way. The desire to acknowledge and to control the effects of the interviewer fits with the modified objectivist/dualist epistemological viewpoint held within the post-positivist paradigm. A more detailed discussion of the ECIT's credibility checks makes further clear this post-positivist leaning epistemological stance and is provided below.

Credibility Checks

The first credibility check is the audio recording of data collection interviews. This check is utilized in an attempt to increase descriptive validity (Butterfield et al., 2009; Maxwell, 1992). Descriptive validity regards the collection of participant statements while attempting either to eliminate or to make explicit any identified omissions (Maxwell, 1992). Within the ECIT, this validation check aims to honour participant voices by capturing their words as accurately as possible and by working with their voices directly. The acknowledgement of the potential for undesirable bias in the recording of participants' words and the corresponding attempt to control for this bias fit with post-positivist epistemological approaches (Ponterotto, 2005).

The second credibility check concerns interview fidelity. An interview guide is utilized, and an expert in the ECIT method listens to every third or fourth taped interview to ensure that the method is being followed accurately. In addition to sections pertaining to critical incidents, this interview guide contains sections on building rapport. This contextual component encourages clients to tell their story and creates space for follow-up probes and questions (Butterfield et al., 2009). These additions acknowledge that the ECIT data collection has a relational element and is interactional. Checking interview fidelity in this way is thought to strengthen the robustness of study findings. It helps to ensure that interviewers are not using leading questions or prompts so that all participants are given equal opportunity to express their views fully, allowing readers to evaluate the results with the knowledge that the method has fidelity (Creswell, 2007). The idea that uniform fidelity in relational-based data collection methods will increase robustness and therefore make a study's findings more likely true fits into a post-positivist epistemology.

The third credibility check is the independent extraction of critical incidents. An individual other than the person who initially identified the critical incidents is given approximately 25% of participants' transcripts and asked to re-extract the incidents independently. In line with techniques used within early CIT validation studies (Andersson & Nilsson, 1964), this check aims to ensure that researchers are identifying information of critical importance to the participants reliably. The attempt to ensure critical incident identification reliability among researchers may indicate a corresponding desire to eliminate differences in perception between researchers, as that bias may distort the truth of the results, and such an attempt fits within a post-positivist epistemology.

The fourth credibility check regards exhaustiveness within the data. The ECIT concept of exhaustiveness, as described by Flanagan (1954), is in line with Creswell's (2007) concept of saturation, and it involves identifying the point at which new interview data no longer allow for the generation of new analysis categories. This check allows the researcher to demonstrate with confidence that the participants' perspectives on a particular domain have been expressed fully. The idea that knowledge may be acquired completely and that this complete knowing may be proved more likely true through the achievement of a prescribed data saturation point fits into the post-positivist epistemological framework.

The fifth credibility check involves the calculation of participation rates. The percentage of participants who provided data fitting into any given category is reported so that the reader may judge the relative importance of each category for participants (Borgen & Amundson, 1984). This check allows readers to evaluate the degree to which researchers have honoured participants' voices throughout the analysis. The need to evaluate the degree to which participants' voices have been honoured, with subsequent ramifications for the validity or truth of the analysis, fits with a post-positivist epistemological stance.

The sixth credibility check involves the independent placement of incidents into categories. An independent judge places a random selection of 25% of the incidents within each category into the category system generated by the researcher. Independent category placement is compared to the researcher's original placement, with matched rates of 80% or better considered desirable (Andersson & Nilsson, 1964). Discrepancies with the placement of incidents within categories are attended to in a cross-checking procedure with participants. This check is intended both to increase confidence in the inferences made during analysis and to provide space for participant collaboration in making these inferences. The idea that researcher bias may cause the inferences they make to be incorrect in some way, and that an independent judge may recognize this and correct it, fits with a post-positivist epistemological stance.

The seventh credibility check involves the cross-checking of data analysis through a second participant interview. Participants can endorse or clarify the identification of incidents from their transcripts, the categories created from these incidents, and the placement of their incidents within these categories; they can also point out any incidents that were missed and expand on them. Any incidents that the researchers were not able to understand sufficiently may be clarified, and any disagreements identified during the independent placement of incidents into categories may be resolved by the participant. This check fits within the concept of interpretive validity or the degree to which analysis is capturing the participant's intended perspective and meaning (Maxwell, 1992). Cross-checking within the ECIT acknowledges that qualitative analysis is inherently inferential and interpreted by the researcher and therefore provides participants with an opportunity to endorse and to continue to influence the researcher's understanding of their experience. The desire for identification, control, and adjustment of the subjectivity of researcher interpretations implies that the analysis may be closer to some true understanding of the target of data collection if the checks are done correctly. This implication fits into a post-positivist epistemology.

The eighth credibility check involves requesting that two or more experts in the field comment on the potential usefulness of the categories, on if they are surprised by any of the categories, and on if they think anything is missing from the categories. This check allows the subjective interpretation of participants' voices to be set in context by someone familiar with their experiences. If an expert in the activity being targeted sees the generated categories as matching their own, similar experience, it increases the likelihood that the participants' voices are being heard and interpreted accurately. If the categories do not match the expert's expectation, it does not necessarily indicate that the results are invalid, but rather, the possibility of something new being uncovered is considered. However, the idea that experts may have some more in-depth knowledge of an objective reality and that results gain credibility through comparison to this expert opinion fits into a post-positivist epistemology.

The ninth credibility check involves considering how well the results of the study fit with existing theories regarding the subject of inquiry, otherwise known as "theoretical validity" (Maxwell, 1992). Researchers state explicitly the theoretical assumptions that underscore the research they are conducting and set these assumptions in context with the scholarly literature on the subject. Also, the categories generated by the research are placed in context with the theoretical literature. Lack of support for a category does not invalidate the category, but rather it indicates that something new and needing of increased consideration may have been identified. Setting the assumptions and results of ECIT research in context with the related literature allows the reader to make better judgments about the degree to which the results apply to current explanatory models. The reader is also assisted in understanding the researcher's perspectives and biases that they may have brought into the project. Being able to make a judgment about how valid the research is based on previous research is a post-positivist idea.

Ontological Influence on Credibility Checks

While these credibility checks may be largely post-positivist in their originating nature, the ontological position of the researcher vis-à-vis the topic of inquiry must be considered. Are these checks intended to identify and potentially to control for the distortion of an objective reality introduced by subjectivity (i.e., positivist or post-positivist ontology), or are they aimed at honouring the subjective nature of the participants' reality by capturing their intended expression as clearly as possible while illuminating the contributions that researcher subjectivity has added to understanding this valid and relatively true expression (i.e., constructivist ontology)?

As Maxwell (1992) discussed, validity in this sense may not imply an ontology of objective and absolute truth or reality, but rather it acknowledges that there are several ways of assessing the strength of inferences made regarding a participant's account or perspective. Credibility checks in a relativist context become an audit trail that readers may follow to evaluate the trustworthiness of the analysis and get a sense of how the researcher's values and bias have shaped the findings, rather than attempt to eliminate or control distortions in detecting an objective truth. This makes the epistemology of the ECIT flexible in a similar way to its ontology: The ontological beliefs of the researcher may cause the goal of the ECIT's epistemology to change from post-positivism to a hybrid of post-positivism and constructivism. However, it should be noted that, though it is flexible, it would be difficult to justify using the ECIT from a purely constructivist perspective, and if the position of the researcher and the topic of inquiry best match a purely relativist ontology/epistemology, another method may provide a better fit (e.g., phenomenology or narrative).

Axiology

Axiology refers to the role of the researcher's values in conducting research (Ponterotto, 2005). These values have an effect on what the researcher deems important within the study, what information is of interest, and what constitutes fair and reliable analysis and use of that information (Carter & Little, 2007). Axiological perspectives reflect a range of beliefs about researcher values: (1) that they have no influence (positivist), (2) that they influence our ability to identify an objective reality clearly and therefore should be acknowledged and frequently controlled for (post-positivism), (3) that they are necessary and contribute to the inescapable co-construction of data (constructivism), and (4) that they encourage actively the influence of researcher values (critical theory) (Ponterotto, 2005).

The ECIT's adherence to interview protocols and to numerous credibility checks may suggest that the researcher's values may influence research and that attempts to increase objectivity by controlling this influence through checks should be made. The attempt to control researcher influence would place the ECIT into a post-positivist axiology. However, as detailed in the ontology and epistemology sections above, the intent of these elements may also be to ensure that the subjective target of inquiry (participants' constructed reality) is honoured and that researcher influence may be known and included in consideration of this constructed reality. To this end, the inclusion of a statement detailing the researcher's values, experience, biases, expectations, potential influence, and ontological viewpoint should be included when writing up the results of an ECIT study. This would make firmly clear how the researcher is attempting to utilize the ECIT, how they intend to integrate the post-positivist leaning nature of the ECIT's credibility checks, and how their axiology fits in with their interpretation of results.

Rhetorical Structure

Rhetorical structure describes the language used in communicating the details of the research study and typically matches the epistemological and axiological perspective taken by the researcher (Ponterotto, 2005). ECIT studies present results as categories and use concise language in describing the data collection and analysis steps (Butterfield et al., 2009). Two rhetorical techniques are utilized in illustrating the data analysis: (a) tables containing emerging category titles, the number and percentage of participants subsumed within each category, the number of critical incidents subsumed within each category, and the total number of incidents (for table examples see Arsenault & Domene, 2018, pp. 25–26; Butterfield et al., 2010, p. 149) and (b) detailed category descriptions with an emphasis on illustrative quotes in participants' voices (Butterfield et al., 2009). While the precise tables used to present results may have the initial appearance of a positivist rhetorical structure, the inclusion of participants' voices lines up with the

personalized and subjective reporting favoured by some forms of post-positivist and constructivist approaches (Guba & Lincoln, 1994; Ponterotto, 2005).

As with the ECIT's ontological, epistemological, and axiological approach, these two rhetorical techniques suggest a hybrid paradigm and highlight the importance of researchers declaring their philosophical intentions. Categories in tables containing adherence information, concise language, and the inclusion of participant voices are presented so that readers may evaluate easily the inferences made by researchers. The purpose of evaluating these inferences may be to judge their influence on the observation of an objective truth or to discover their contribution to a relativist reality, depending on the intent of the researcher. As with the ECIT's axiological stance, a description of the researchers' values, biases, and experience and of the effect of the research on the researcher is necessary to make clear the intention of its rhetorical structure.

Methods

Methods have been defined as specific techniques, procedures, or tools of research (Harding, 1987a; Schwandt, 2000). The ECIT prefers face-to-face interviews (though interviews through phone or video conferencing are permissible and are likely to increase in usage as technology develops) with a semi-structured interview protocol (Butterfield et al., 2009). Probes and clarifications are permissible (Butterfield et al., 2009). Interview protocol questions are discovery based, with attempts at standardizing areas of discovery across participants (Butterfield et al., 2009). These methods may be seen as rigid for identifying and considering the bias in discovering a true reality (as in the post-positivist paradigms) or as thorough in an attempt to report, honour, and understand as best as is possible the subjective and relativist perceptions of participants (as in the constructivist paradigm). The aim of the ECIT's methods, therefore, depends on the stated intent of the researcher.

Conclusion

Considering the above discussion, while the ECIT contains elements that lean toward a post-positivist paradigm, it also contains a malleable ontological position. This makes the ECIT a flexible method that is able to meet the needs of researchers approaching from multiple ontological perspectives. Included with this flexibility is a high degree of specificity and rigour involving its epistemological approach. While this rigour may provide a safeguard against methodological error, researchers should be sure to acknowledge and discuss what ontology they have adopted, how the epistemological rigour within the ECIT fits with their ontology, and how they may have adapted the ECIT to match their intentions. The inclusion of these philosophical elements will increase the strength and thoroughness of research completed with this effective and flexible method.

References

Andersson, B.-E., & Nilsson, S.-G. (1964). Studies in the reliability and validity of the critical incident technique. *Journal of Applied Psychology*, *48*(6), 398–403. https://doi.org/10.1037/h0042025

Arsenault, C. L., & Domene, J. F. (2018). Promoting mental health: The experiences of youth in residential care. *Canadian Journal of Counselling and Psychotherapy*, *52*(1), 16–42. https://cjc-rcc.ucalgary.ca/article/view/61172

Borgen, W. A., & Amundson, N. E. (1984). *The experience of unemployment: Implications for counselling the unemployed*. Nelson Canada.

Butterfield, L. D., & Borgen, W. A. (2005). Outplacement counseling from the client's perspective. *Career Development Quarterly*, *53*(4), 306–316. https://doi.org/10.1002/j.2161-0045.2005.tb00661.x

Butterfield, L. D., Borgen, W. A., Amundson, N. E., & Erlebach, A. C. (2010). What helps and hinders workers in managing change. *Journal of Employment Counseling*, *47*(4), 146–156. https://doi.org/10.1002/j.2161-1920.2010.tb00099.x

Butterfield, L. D., Borgen, W. A., Amundson, N. E., & Maglio, A.-S. T. (2005). Fifty years of the critical incident technique: 1954–2004 and beyond. *Qualitative Research*, *5*(4), 475–497. https://doi.org/10.1177/1468794105056924

Butterfield, L. D., Borgen, W. A., Maglio, A.-S. T., & Amundson, N. E. (2009). Using the enhanced critical incident technique in counselling psychology research. *Canadian Journal of Counselling*, *43*(4), 265–282. https://cjc-rcc.ucalgary.ca/article/view/58863

Cacioppo, J. T., Semin, G. R., & Berntson, G. G. (2004). Realism, instrumentalism, and scientific symbiosis: Psychological theory as a search for truth and the discovery of solutions. *American Psychologist*, *59*(4), 214–223. https://doi.org/10.1037/0003-066X.59.4.214

Canadian Psychological Association & Psychology Foundation of Canada. (2018). *Psychology's response to the Truth and Reconciliation Commission of Canada's Report*. https://cpa.ca/docs/File/Task_Forces/TRC%20Task%20Force%20Report_FINAL.pdf

Carter, S. M., & Little, M. (2007). Justifying knowledge, justifying method, taking action: Epistemologies, methodologies, and methods in qualitative research. *Qualitative Health Research*, *17*(10), 1316–1328. https://doi.org/10.1177/1049732307306927

Chell, E. (2004). Critical incident technique. In C. Cassell & G. Symon (Eds.), *Essential guide to qualitative methods in organizational research* (pp. 45–60). SAGE Publications. https://doi.org/10.4135/9781446280119.n5

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). SAGE Publications.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. SAGE Publications.

Elliott, R., Fischer, C. T., & Rennie, D. L. (1999). Evolving guidelines for publication of qualitative research studies in psychology and related fields. *British Journal of Clinical Psychology*, *38*(3), 215–229. https://doi.org/10.1348/014466599162782

Eshlaghy, A. T., Chitsaz, S., Karimian, L., & Charkhchi, R. (2011). A classification of qualitative research methods. *Research Journal of International Studies*, *20*(20), 106–123.

Flanagan, J. C. (1954). The critical incident technique. *Psychological Bulletin*, *51*(4), 327–358. https://doi.org/10.1037/h0061470

Giorgi, A. (2009). *The descriptive phenomenological method in psychology: A modified Husserlian approach*. Duquesne University Press.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105–117). SAGE Publications.

Hansen, J. T. (2004). Thoughts on knowing: Epistemic implications of counselling practice. *Journal of Counseling and Development*, *82*(2), 131–138. https://doi.org/10.1002/j.1556-6678.2004.tb00294.x

Harding, S. (Ed.). (1987a). *Feminism and methodology: Social science issues*. Indiana University Press.

Harding, S. (1987b). Introduction: Is there a feminist method? In S. Harding (Ed.), *Feminism and methodology: Social science issues* (pp. 1–14). Indiana University Press.

Hoffman, R. (2013). Respecting Aboriginal knowing in the academy. *AlterNative: An International Journal of Indigenous Peoples*, *9*(3), 189–203. https://doi.org/10.1177/117718011300900301

Jacquette, D. (2002). *Ontology*. McGill-Queen's University Press.

Kaplan, A. (1964). *The conduct of inquiry: Methodology for behavioral science.* Chandler.

Kemppainen, J. K. (2000). The critical incident technique and nursing care quality research. *Journal of Advanced Nursing*, *32*(5), 1264–1271. https://doi.org/10.1046/j.1365-2648.2000.01597.x

Kincheloe, J. L., & Mclaren, P. (2011). Rethinking critical theory and qualitative research. In K. Hayes, S. R. Steinberg, & K. Tobin (Eds.), *Key works in critical pedagogy* (pp. 285–326). Sense Publishers. https://doi.org/10.1007/978-94-6091-397-6_23

Kirkness, V. J., & Barnhardt, R. (2016). First Nations and higher education: The four r's—respect, relevance, reciprocity, responsibility. *Journal of College and University Student Housing*, *42*(2), 94–109 (Reprinted from "First Nations and higher education: The four r's—respect, relevance, reciprocity, responsibility," 1991, *Journal of American Indian Education*, *30*[3], 1–15).

Kovach, M. (2018). Doing Indigenous methodologies: A letter to a research class. In N. K. Denzin & Y. S. Lincoln (Eds.), *The SAGE handbook of qualitative research* (5th ed., pp. 214–234). SAGE Publications.

Kukla, A. (2000). *Social constructivism and the philosophy of science*. Routledge. https://doi.org/10.4324/9780203130995

Langdridge, D. (2007). *Phenomenological psychology: Theory, research and method*. Pearson Education.

Max, K. (2005). Anti-colonial research: Working as an ally with Aboriginal peoples. *Counterpoints*, *252*, 79–94. https://www.jstor.org/stable/42978745

Maxwell, J. (1992). Understanding and validity in qualitative research. *Harvard Educational Review*, *62*(3), 279–301. https://doi.org/10.17763/haer.62.3.8323320856251826

McGrath, J. E., & Johnson, B. A. (2003). Methodology makes meaning: How both qualitative and quantitative paradigms shape evidence and its interpretation. In P. M. Camic, J. E. Rhodes, & L. Yardley (Eds.), *Qualitative research in psychology: Expanding perspectives in methodology and design* (pp. 31–48). American Psychological Association. https://doi.org/10.1037/10595-003

Moon, K., & Blackman, D. (2014). A guide to understanding social science research for natural scientists. *Conservation Biology*, *28*(5), 1167–1177. https://doi.org/10.1111/cobi.12326

Ponterotto, J. G. (2002). Qualitative research methods: The fifth force in psychology. *Counseling Psychologist*, *30*(3), 394–406. https://doi.org/10.1177/0011000002303002

Ponterotto, J. G. (2005). Qualitative research in counseling psychology: A primer on research paradigms and philosophy of science. *Journal of Counseling Psychology*, *52*(2), 126–136. https://doi.org/10.1037/0022-0167.52.2.126

Schnarch, B. (2004). Ownership, control, access, and possession (OCAP) or self-determination applied to research: A critical analysis of contemporary First Nations research and some options for First Nations communities. *Journal of Aboriginal Health*, *1*(1), 80–95.

Schwandt, T. A. (1994). Constructivist, interpretivist approaches to human inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 118–137). SAGE Publications.

Schwandt, T. A. (2000). Three epistemological stances for qualitative inquiry: Interpretivism, hermeneutics, and social constructionism. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 189–213). SAGE Publications.

Schwandt, T. A. (2001). *Dictionary of qualitative inquiry* (2nd ed.). SAGE Publications.

Sciarra, D. (1999). The role of the qualitative researcher. In M. Kopala & L. A. Suzuki (Eds.), *Using qualitative methods in psychology*. SAGE Publications. https://doi.org/10.4135/9781452225487.n4

Scotland, J. (2012). Exploring the philosophical underpinnings of research: Relating ontology and epistemology to the methodology and methods of the scientific, interpretive, and critical research paradigms. *English Language Teaching*, *5*(9), 9–16. https://doi.org/10.5539/elt.v5n9p9

Sharoff, L. (2008). Critique of the critical incident technique. *Journal of Research in Nursing*, *13*(4), 301–309. https://doi.org/10.1177/1744987107081248

Shattuck, L. G., & Woods, D. D. (1994). The critical incident technique: 40 years later. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, *38*(17), 1080–1084. https://doi.org/10.1177/154193129403801702

Slevitch, L. (2011). Qualitative and quantitative methodologies compared: Ontological and epistemological perspectives. *Journal of Quality Assurance in Hospitality and Tourism*, *12*(1), 73–81. https://doi.org/10.1080/1528008X.2011.541810

Smith, J. A., & Osborn, M. (2008). Interpretative phenomenological analysis. In J. A. Smith (Ed.), *Qualitative psychology: A practical guide to research methods* (2nd ed., pp. 53–80). SAGE Publications.

Smith, L. T. (2012). *Decolonizing methodologies: Research and Indigenous peoples* (2nd ed.). Zed Books.

Willig, C., & Stainton-Rogers, W. (2010). Introduction. In C. Willig & W. Stainton-Rogers (Eds.), *The SAGE handbook of qualitative research in psychology* (pp. 1–12). SAGE Publications. https://doi.org/10.4135/9781848607927.n1

Wilson, S. (2001). What is an Indigenous research methodology? *Canadian Journal of Native Education*, *25*(2), 175–179.

Woolsey, L. K. (1986). The critical incident technique: An innovative qualitative method of research. *Canadian Journal of Counselling*, *20*(4), 242–254.

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