Critical realism (CR) acknowledges that a social world, structure or process exists

para. 3). These aspects have significant

is because the definition acknowledges

the dual existence of social structure as

an external objective reality and human

agency constructing subjective realities. The

dominant research paradigms-positivism

and constructivism-create an ontological

binary in that reality is either objective or

socially constructed from their respective

bearing on social work research. This

Application of critical realism in social work research: Methodological considerations

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ABSTRACT

INTRODUCTION: Critical realism (CR) provides a unique and robust philosophical framework for social work researchers by attending to the role of individual agency and social structure; however, little practical guidance is available regarding how the ontology and epistemology of CR can be applied as a methodological framework for qualitative research.

APPROACH: In this article, we explain what CR is in relation to other ontological and epistemological positions and provide some practical suggestions for CR-informed research by drawing on relevant examples from a study that examined the causes of trust among Korean migrants in Aotearoa New Zealand.

CONCLUSIONS: We suggest that the three-layered ontological map of CR justifies the use of series of data-coding processes to identify preliminary tendencies at the surface layer of empirical reality, abductive reasoning to formulate ideas about how observed tendencies are connected at the middle layer of actual reality and retroductive inference to identify causal mechanisms or structures and key conditions embedded in the deeper layer of real reality to produce certain experiences under study.

KEYWORDS: Critical realism; social work research methodology; ontological map; retroduction; intensive data

The IFSW global definition of social work highlights that social work promotes social change and "engages people and structures to address life challenges and enhance wellbeing" (International Federation of Social Workers (IFSW), 2022, para. 1). Core mandates of the definition point out that social change is "driven by the need to challenge and change those structural conditions that contribute marginalisation, social exclusion and oppression" and all efforts to make social change need to recognise the role human agency has in achieving all forms of justice (IFSW, 2022,

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as an external objective reality to which human beings actively correspond by constructing their own meaning and understanding (Peter & Park, 2018). In this respect, the philosophical framework of CR provides researchers with insight into the way people interpret and give meaning to their experiences or understandings and their correspondence to the enabling and constraining effects of objective social structure (Houston, 2001, 2010). Concurrently, a CR approach helps with identifying causal mechanisms and their conditions embedded in the deeper layer of *real* reality that shapes the experiences or understandings of individual agency to the social events under study.

This understanding of reality supports IFSW global definition's claim of the existence of objective social structures and subjective human experiences and subjective constructions of knowledge. Therefore, recognising how the philosophical assumptions of CR relate to the series of methodological decisions for CR-informed research is essential for social work researchers, especially those who want to explain how and why particular empirical experiences under study emerge from particular social conditions and contexts (Craig & Bigby, 2015). In this article, we explicate a methodological consideration for CR-informed research founded on its realist ontology and subjectivist epistemology and discuss its contributions and interrelationships. This understanding will allow social work researchers to discern whether CR is an appropriate philosophical position to inform their methodological considerations.

Conceptual clarification of critical realism

CR has emerged as an alternative to both positivist and constructivist stances, which have long been prominent paradigms in social research, by integrating "ontological realism and epistemological constructivism or interpretivism" (Maxwell, 2012, p. 6). In this sense, CR accepts positivism's ontological realism as well as constructivism's epistemological subjectivism. This sounds problematic until we understand why CR posits an integrated philosophical stance from both positivism and constructivism and how the acceptance of *realist* ontology and *subjectivist* epistemology allows a perspective that acknowledges the existence of causal social structures as well as the presence of human interpretation and meaning-making processes (Danermark, 2002).

Positivism is based upon a realist ontology and objectivist epistemology (Crotty, 1998). Ontologically considered, positivists commit to the reality that exists as observable events. The ultimate phenomena pursued by the positivists' data collection are the observed events (Fleetwood, 2015), such as the growth rate of the Asian population in Aotearoa New Zealand, change in New Zealanders' perspective towards immigrants from Asian countries, and the level of trust expressed by Asian immigrants settling in Aotearoa New Zealand. Most positivists posit that the observed event is real and neither mediated by the observer's senses nor is it socially constructed (Cohen et al., 2013; Marsh & Furlong, 2002).

Knowledge in social science, including social work, could be obtained by studying people's external reactions (which could be measured), to the observed events (Fleetwood, 2015). Positivists, for example, consider that trust among people exists as a real entity and knowledge about trust could be obtained by observing people's social behaviours. In this sense, the positivist epistemological approach is objectively discovering event regularities. Objective and scientific knowledge is gained only if these events manifest "patterns and regularities, causes and consequences" that exclusively exist in the world (Denscombe, 2002, p. 14). Consequently, the research method

used by positivists is typically aligned with quantitative methods (House, 1991). If, for example, levels of trust towards general others increased among Koreans living in Aotearoa New Zealand following their settlement, then knowledge of this could be obtained by developing theory, using it to make a prediction in the form of a hypothesis, and then testing the hypothesis. If the hypothesis was not falsified, the theory, or part of it, was objective and true.

Positivism thus can provide a prediction based upon induction from past event regularities. However, positivism could not provide an explanation for *why* the observed event occurred. If one predicts that settling in a high-trust society will be followed by an increased level of generalised trust among settled Korean migrants, it does not explain why the level of trust increased after their settlement in Aotearoa New Zealand. It is because of the ontology of positivism. The observed events are the ultimate and only phenomena that positivists could collect from the data (Fleetwood, 2015). Knowledge derived from the observed event regularities, therefore, provides not an explanation but a prediction about the observed events.

On the contrary, constructivism is based upon a relativist ontology and subjective epistemology (Guba & Lincoln, 2013). The ontological view of constructivism is that reality is entirely constructed socially through human discourse or knowledge (Crotty, 1998). This means there is no reality to be interpreted but that reality is constructed only with the interpretation. For example, no reality is believed to exist (e.g., a *high* or *low* trust society) independent of the discourse of a high or low trust society. Therefore, constructivists consider reality is processual and multiple and, at the same time, reality is doubted and sometimes denied by competing claims (Fleetwood, 2015). One can claim that Aotearoa New Zealand is a high trust society. This is a discourse that constructs a reality of a high trust society. Others can claim that Aotearoa

New Zealand is a low trust society. This, too, is a discourse that constructs a reality of a low trust society. The claim that Aotearoa New Zealand is a high trust society is only one reality and it is true for those who claim it. The claim that Aotearoa New Zealand is a low trust society too is a reality and is true for those who claim it.

In this sense, the epistemological view of constructivism is subjectivism (Guba & Lincoln, 2013). Realities are constructed socially or discursively. Thus, constructivists aim to establish meanings or discourses they attach to social phenomena by identifying constructed discourses or interpretations (Marsh & Furlong, 2002). Consequently, the research method used by constructivists is typically aligned with qualitative methods (Neuman, 2011). In opposition to the epistemological view of positivism, in which knowledge could be gained from the people's external response to the observed events, the constructivist considers that knowledge could only be obtained by studying the internal responses of people, such as perception, beliefs, intensions, and interpretations (Fleetwood, 2015).

CR attempts to synthesise essential aspects of the two major research paradigms discussed earlier by accepting a realist ontology of positivism and allowing for a subjectivist epistemology of constructivism in research (Grix, 2004). CR ontology acknowledges positivists' ontological assumption regarding reality by accepting reality as having real existence independent of its identification by people. Although CR shares the positivists' ontological assumption regarding reality, the ontological position of critical realists differs from the positivists by invoking a "layered conception of ontology" (Kerr, 2003, p. 122). Positivists premise a one-layer *flat* reality in which the observed event only constitutes a pathway to knowledge (Fleetwood, 2015). However, critical realists recognise the existence of additional domain of deeper reality (Neuman, 2011, p. 110).

Exposition of the three ontological domains of CR

The ontological position of CR is that reality is composed of three stratified ontological domains, including "the empirical, the actual, and the real" (Bhaskar, 1978, p. 56). This stratified reality contains entities composed of experiences, events and mechanisms, and each concept corresponds to each domain of reality respectively (Collier, 1994; Danermark et al., 2002). The surface layer of empirical reality is the domain of experiences in which people experience, observe or interpret events. The middle level of actual reality is the domain of events. Critical realists posit that people's experiences at the surface layer of empirical reality *emerge* from the events at the middle layer of actual reality. This means that experiences existing at the empirical level of reality are rooted in, but irreducible to, events existing at the actual level of reality (Fleetwood, 2015). In this sense, while positivists premise restricted ontology committing to the one-layer reality that exists as observed events and fused ontological domains of the actual (event) and empirical (experience), critical realists consider the events themselves to be separated from the experiences occurring at the level of empirical reality and independently existing at the middle level of actual reality (Danermark et al., 2002).

The deepest layer of *real* reality is the domain of mechanisms. Critical realists consider the events at the middle layer of actual reality are emerged by causal mechanisms embedded in the entities such as social structures at the deepest layer of reality. This deepest layer is described in CR as real *reality*. It is the domain of mechanisms that is separate from the actual layer of reality where events occur and from the empirical layer of reality where events are mediated by the senses or interpretation of people. This means that experiences are rooted in, but are irreducible to, events, which are rooted in but irreducible to the social structure and mechanism (Fleetwood, 2015). CR postulates

that the real reality operates invisibly as causal mechanisms to generate events and corresponding experiences.

The ontological position of CR, for example, posits that high trust society exists as middle layer of actual reality while, at the surface layer of reality, people could build their own trust tendencies towards others in general social contexts based on their own experiences. Therefore, within one society, competing claims such as "Aotearoa New Zealand *is* a high trust society", and "Aotearoa New Zealand is *not* a high trust society" can exist to the empirical reality of immigrants' trust tendencies in Aotearoa New Zealand society. Nevertheless, critical realists consider that a trust society objectively exists at the middle level of actual reality. For critical realists, the claim that "Aotearoa New Zealand is a high trust society" is true or false in accordance with whether immigrants do (or do not) experience an extended trust radius towards other New Zealanders. The core focus of the critical realist approach is what mechanism or structure is at the deeper layer of reality that cause the claim of high trust society and in what conditions people could experience extended trust tendencies towards other New Zealanders in the general social context.

Exposition of the epistemological position of CR

The three-layered stratified ontological map of CR acknowledges an "ontological gap" between what experiences people sense or interpret at the surface layer of empirical reality, what events really happen at the middle layer of actual reality, and what structure or mechanism at the real level produces the events that have real effects on people's lives (Danermark et al., 2002, p. 39). In this regard, although CR shares its realist ontological position with positivism, the epistemological approach differs from that of positivism, which studies empirically measurable people's social behaviours to the one-layer reality of observed events. CR posits that the social events under study can be measured empirically but acknowledges its limitation.

Empirical measurements are always mediated through the filter of human senses or interpretation (Fletcher, 2017; Neuman, 2011). CR recognises that our knowledge of the surface layer of empirical reality depends on some form of "theory or concept" because human sense and interpretation are not "pure, neutral, and unmediated; rather, ideas, beliefs, and interpretations colo[u]r or influence what and how we observe" (Neuman, 2011, p. 110). In this respect, unlike the positivists' objectivist epistemological position, CR suggests that the mediated and sensed knowledge about the empirical reality only reveals partial reality because the surface layer of empirical reality is caused by a deeper reality (Neuman, 2011). Therefore, the empirical reality is a transitive reality where people's experiences emerge due to the causes of the unobservable layer of real reality.

CR posits that knowledge of a deeper layer of real reality cannot be reduced to the observation of experiences of the events at the surface layer of empirical reality. While the epistemological position of positivism is that knowledge could be objectively obtained by discovering event regularities, CR considers a positivist approach causes a problematic reduction of the nature of reality to only those empirically observable facts through scientific approaches. Bhaskar (1998, p. 27) has criticised the "epistemic fallacy" of the positivist approach that conflates reality with our knowledge of it. CR epistemology ultimately pursues acquiring knowledge of the mechanisms at the deeper layer of real reality that produce the events and experiences.

This may raise an epistemological question regarding how the invisible causal mechanisms can be identified. In response, CR adopts a reasoning process termed *retroduction*, the central inference for CR-informed research (Bhaskar & Danermark, 2006; Bunt, 2016; Lawson, 1998). This inference structures a process into the layer of the deeper reality by raising a transcendental question on what must exist for the identified phenomena to be the case (Houston, 2022). Retroduction proceeds to seek what must exist for the observed preliminary tendencies to be emerged at the surface layer of empirical reality by seeking evidence to explain what is causing the identified preliminary pattern.

Bhaskar (1979) explained that causal mechanisms in the social world differ from those in the natural world. In the social world, causal mechanisms can "exist only in virtue of the activities they govern and cannot be empirically identified independently of them" (Bhaskar, 1979, p. 48). Fleetwood (2015, p. 206) elaborated that "[s]ociety continues to exist only because agents reproduce or transform those structures and mechanisms that they encounter in their social actions". It is because structures and mechanisms exist prior to and apart from people, yet can exist only with people who reproduce or *transform* a set of pre-existing structures and mechanisms. For example, immigration to New Zealand requires mechanisms for establishing immigration policy for foreigners. Immigrants do not create or produce structures and mechanisms for their settlement in this country-but immigration requires the pre-existing structures and mechanisms. Immigrants reside in Aotearoa New Zealand by drawing upon these structures and mechanisms. The structures and mechanisms for immigration can exist only with people who migrate to Aotearoa New Zealand at the same time immigrants continue to reproduce and transform the set of pre-existing structures and mechanisms for immigration. In this sense, mechanisms and structures can exist only with people's active involvement.

The social world is, however, complex and possesses multiple causal mechanisms.

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Individuals make their own interpretation of each social event and constantly interact with the social world. CR presumes that people and causal mechanisms exist at different ontological layers; therefore, they cannot be subsumed into one another (Scott, 2005). In this sense, CR provides a philosophical foundation that allows an interplay between agency and structure (Scott, 2005). CR posits that people have the autonomy to make choices, interpret social events and give meaning to their experiences; however, their autonomy is also confined and bounded by social structures or mechanisms (Neuman, 2011). Nevertheless, CR recognises that, under certain conditions, people have the potential to "look beyond immediate surface appearance and break through what they reified", leading collective human action to "alter deep structures" in the social world (Neuman, 2011, p. 111). When this occurs, it shows that people's experiences at the surface layer of empirical reality are influenced (but not determined) by causal mechanisms at the deeper layer of real reality.

Therefore, CR-informed research methodology has a dual focus on how human agency and structure interplay. Moreover, acknowledging the context for the activation of the causal mechanism should be considered. This is because our social world is a dynamic and unpredictable open system (Bhaskar, 1989); thus, "the outcome of a mechanism in any given situation is dependent on the context in which it occurs" (Craig & Bigby, 2015, p. 314). Therefore, in CR research, researchers engage in a series of reasoning processes—such as abduction and retroduction—which are delineated in the discussions later.

Application of critical realism: An empirical example

Thus far, we have provided some conceptual clarifications of CR by explaining it in relation to other dominant ontological and epistemological positions. We now undertake to present an empirical example to illustrate how CR can be applied in social work research. The following example is drawn from a recently completed social work doctoral study of the causes of trust experiences of Koreans who are residing in New Zealand (Park, 2020). The doctoral study aimed to explain what causes trust in the context of migration.

Generalised trust, which refers to how much people can extend their radius of trust towards others in general social contexts, has extensive and positive consequences for people. Individuals who believe that others in society can be trusted tend to be healthier, happier, and pro-social (Helliwell & Wang, 2011; Kawachi et al., 2008; Uslaner, 2002). Given that Koreans tend to show low level of generalised trust towards others in general social contexts (Choi & Han, 2008; Fukuyama, 1995), this research asked what trust experiences Koreans reveal in the context of Aotearoa New Zealand and what cause such trust experiences. To answer these research questions, the study engaged a CR-informed methodology to explain the causal mechanisms or structures existing at the deepest layer of real reality and their impact on experienced trust among Koreans living in Aotearoa New Zealand. Ethical approval for the research was granted by the University of Auckland Human Participants Ethics Committee (Reference no. 2016/017374).

Empirical reality: Data collection and coding to identify preliminary tendencies of empirical reality

CR offers "critical methodological pluralism" (Danermark et al., 2002, p. 152) by combining quantitative and qualitative methods under the same metatheoretical framework of CR. A necessary presupposition for critical methodological pluralism is to reorient quantitative and qualitative methods towards a CR framework by proposing to identify

generative causal mechanisms and describe how the causal mechanisms are emerged in empirical reality (Danermark et al., 2002; Iosifides, 2012). In this sense, CRinformed research incorporates two types of empirical approaches (Danermark et al., 2002; Sayer, 1992). One is an extensive empirical approach that uses quantitative methods to ascertain patterns or regularities in empirical phenomena. The other is an *intensive* empirical approach that applies qualitative methods to probe for deep description. CR acknowledges that a social event can be sensed or experienced by people at the surface layer of empirical reality (Bhaskar, 1979). CR allows two sets of data sources, extensive and intensive, to identify any demiregularities in the data as these preliminary tendencies would direct further data analysis. The identified tendencies are regarded as a "force" emerged from, but irreducible to, the generative causal mechanisms at the deeper layer of real reality (Fleetwood, 2015, p. 208).

Data collection

The example research applied an intensive empirical approach to collect data. The intensive data collection included 34 indepth individual interviews and five followup focus group interviews. In the in-depth interviews, the participants recalled their settlement and residence process and associated relational experiences in Aotearoa New Zealand. The in-depth individual interviews served as the primary means of collecting insight into the trust experiences of the participants by allowing them to recall their settlement and residence process and associated relational experiences in Aotearoa New Zealand. The follow-up focus group interviews were conducted with five different cohorts of Korean New Zealanders (three first-generation, one 1.5-generation, and one second-generation) to discuss their understandings of what caused their trust experiences in the context of Aotearoa New Zealand.

Data coding

The transcribed interview data were put through a coding process. A list of provisional codes was pre-developed based on the initial literature review and key research questions (Fletcher, 2017). The pre-set provisional codes included 13 theory-based codes which are derived from the literature on trust in line with the key research questions (e.g., propensity to trust towards local New Zealanders), and nine topic-based codes which are inferred from the interview guides and questioning routes (e.g., recalled social relationships in Aotearoa New Zealand). CR-informed methodology allows deductive but flexible coding process (Fletcher, 2017). The initial coding cycle was guided by the pre-set provisional codes but the process flexibly allowed a data-driven coding process to capture the complexity of the empirical reality. CR approach posits the provisional codes as an initial guideline; then, flexible change, elimination and supplementation of the provisional codes allowed the production of new inductive codes from the intensive data. Through the first coding cycle, the initial 22 provisional codes expanded to 141 codes, which included 44 theory-based codes and 97 topic-based codes.

The central tenet of CR is its acknowledgment of the interplay between human agency and pre-existing societal structure (Craig & Bigby, 2015). After the first coding cycle, a conceptual map of agency and structure was applied to reorganise the expanded provisional codes into a CR-informed conceptual map (Fletcher, 2017). The expanded theory-based and topic-based provisional codes were re-coded under two conceptual maps of agency and structure. The second coding cycle allowed an insight into how the participants' trust experiences are promoted and impeded by social structures, such as the sociocultural characteristics of Aotearoa New Zealand society in which the participants live and interact. For example, the following quotation was coded as "openhearted and kind local people" under the topic-based code of positive relationships with members of Aotearoa New Zealand society:

Here in New Zealand, I feel more comfortable trusting people. I am more inclined to trust New Zealanders with confidence ... My impression towards New Zealanders is that they seem to be composed and relaxed, so I have always had the impression that people here seem to give positive answers when others ask for favours. (Gi-uk)

However, during the second coding cycle, this data segment was re-coded into codes marked as agency ("positively expressed trust towards local New Zealanders") and structure ("relaxed pace society"). This is because the participant explained his impression of the hospitality he experienced while interacting with the local people as a reason for his propensity to trust most New Zealanders. Similarly, the data segment indicated that the participant recognised the society as a composed and relaxed milieu; thus, this data segment was also reorganised into the structure code.

Fletcher (2017, p. 186) highlighted that the second coding cycle is "a starting point to identify demi-regularities" from the data to understand rough patterns as observed in the surface layer of empirical reality. An identified preliminary tendency observed among the participants was that they were willing to extend their radius of trust towards most New Zealanders despite having various relational experiences with the members of the host society.

Actual reality: Abductive inference to formulate ideas about how identified preliminary tendencies are connected to actual reality

The purpose of the applied intensive data collection and the series of coding cycles was to identify the preliminary tendencies emerged at the surface layer of empirical reality (Fletcher, 2017). From this, CRinformed research proceeds to an *abductive reasoning* process. Abduction is a mode of inference for a theoretical redescription of the identified empirical reality to interpret identified preliminary tendencies (Danermark et al., 2002). The abductive reasoning process allows researchers to move towards a deeper reality through an understanding of the identified tendencies within the frame of a wholly different context.

The example study attempted to understand what caused the identified preliminary trust tendencies by identifying the social structures of Aotearoa New Zealand society that shaped the emerged preliminary patterns. However, as Craig and Bigby (2015) highlighted, the explanation should be regarded as one interpretation among the various possible frames and interpretations. In this sense, the applied abductive inference allowed a move towards a deeper understanding of the identified tendency at the empirical level by going "beyond a strictly logical way of understanding a phenomenon" (Craig & Bigby, 2015, p. 315). While the study followed the abductive reasoning process, it required re-engaging with the existing theory and research to reflect on the observed trust tendencies with reference to the previous literature.

For instance, as elaborated in the second cycle of data coding example, a relaxed pace society was identified as one of the structural aspects that influenced Koreans' trust experiences in terms of the trust propensity towards New Zealanders. During the intensive data collection involving the focus group discussions, participants discussed possible reasons for the relaxed social atmosphere, such as a simple lifestyle, work-life balance, family-friendly lifestyle, low crime rates, affordable healthcare services and the public welfare system. By following the second coding cycle, the listed reasons were coded under "relaxed pace society" without focusing on its specific

connections with the trust experiences described by the participants. Nevertheless, while engaging with the literature, the codes were concurrently revisited, and related data were reviewed to formulate ideas about how experiences are connected at the middle layer of actual reality (Craig & Bigby, 2015).

For example, the following quotation was coded in the conceptual map of agency ("positively expressed trust towards most New Zealanders") and structure ("relaxed pace society"):

The social welfare system in New Zealand is pretty well-established. Even when we are sick, and we have to go to a hospital, we don't have to worry about the medical bills. So naturally, the people can have a high level of trust towards the society, and we feel that we are being respected as human beings. (Jin-hui)

Throughout the abductive inference process, we were able to actively connect ideas such as the effect of the well-functioning public welfare system on creating a relaxed pace society and the effect of the welfare system on encouraging an individual's cooperation, which enriches trust among individuals in general social situations. A positive association between a wellfunctioning welfare system and a positive level of generalised trust (Rothstein & Eek, 2003) could be recognised throughout this reasoning process. In this way, the abductive reasoning process allows researchers to deepen their understanding of the identified preliminary tendencies emerging at the empirical reality and how social events at the actual reality relate to the corresponding experiences.

Real reality: Retroductive reasoning to identify causal mechanisms and conditions at the real reality

Retroduction is the central inference for CRinformed research (Bhaskar & Danermark, 2006; Bunt, 2016; Lawson, 1998; Peter & Park, 2018). Retroduction is a mode of inference that involves advancing from theoretical redescription of the empirical experiences of social events and arriving at a conceptualisation of key conditions for the actualisation of causal mechanisms embedded in the deepest layer of real reality (Bhaskar, 1979; Danermark et al., 2002). The goal of retroduction is to understand the cause of the observed preliminary tendencies by identifying the essential conditions required for particular generative mechanisms to actualise at the surface layer of empirical reality. In this sense, the retroductive inference process demands that the researcher move "from concrete to abstract and back again" (Fletcher, 2017, p. 189).

The example study aimed to identify social structures and the necessary contextual conditions that shape observed preliminary tendencies of trust propensities among Korean migrants living in Aotearoa New Zealand. What caused the trust experiences of Korean migrants settling and living in Aotearoa New Zealand? At the early stage of intensive data collection, participants were asked to recall the meaningful social interactions as a way of identifying their perception and related experiences of trust in the context of Aotearoa New Zealand. The recalled relational experiences with local New Zealanders were diverse, from positive to neutral, and to some extent, negative accounts based on the participants' personal and generational differences. However, it became apparent that formal and informal social interactions with members of the host society created opportunities to establish impressions of the contextualised society. These impressions, in turn, became a source of perceived propensity to trust towards most New Zealanders.

For example, a second-generation Korean New Zealander participant, Ho-yeon, willingly expressed her trust towards a majority of New Zealanders despite experiencing racial teasing and bulling from her peers in the primary school. Despite her

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stressful and disappointing experiences, she held a positive attitude towards majority of New Zealanders. This trust attitude was based on a general impression of the society that she has acquired through interactions with the local New Zealanders:

When I look at the people around me, a lot of them have no difficulties in showing their true self to others. The New Zealand society, in general, has a culture that makes everyone try to communicate by trusting each other. The education system is also focused on promoting such values. (Ho-yeon)

This statement signifies the important role of the general impression of the host society and alludes the process of building general trust: The relational experiences with the local New Zealanders did not directly lead to general trust. Instead, those experiences led to building an impression of Aotearoa New Zealand society. And the identified preliminary trust tendencies were based on the established impression of the host society.

A retroductive reasoning process requires moving "between theory and practice to find the 'best fit' explanation to account for a particular phenomenon" (Craig & Bigby, 2015, p. 315). The case example discussed above explains how a retroductive process allowed the identification of the best fit explanation by understanding that: (a) the Koreans' trust experiences are based on, and shaped by, the social interactions that they had with the local New Zealanders: and (b) these social interactions facilitated the creation of an impression of the contextualised society embedded in social structures, which then shaped the observed Koreans' trust experiences. Thus, the Koreans develop a generalised expectation of whether most New Zealanders are trustworthy by extrapolating from the created impression of the contextualised society as derived from their social interactions. In this sense,

the example study concluded that social structures characterised as being open, supportive, relaxed, and fair inferred from the social interactions shape Korean immigrants' trust experiences in Aotearoa New Zealand.

However, the social structures cannot always drive the manifested preliminary trust tendencies at the empirical level of reality. As causal social structures for trust, they require a particular social condition (Bhaskar, 1979; Craig & Bigby, 2015; Fletcher, 2017; Houston, 2010). Through the retroductive reasoning process, it was concluded that the sense of safety functions as a key condition required for the key causal social structures to activate and result in observed trust preliminary tendencies at the empirical level of reality, as echoed in the following quotes:

I tend to be cautious about trusting people. [...] However, it's *easier* [emphasis added] for me to trust people in New Zealand. (In-hye)

It's easier to trust people in New Zealand. I guess it is because I feel more *comfortable* [emphasis added] living here. [...] It is more relaxed and laid back. I think I can comfortably have a good impression of other people. (Min-ho)

The sense of safety perceived from the social structures embedded in Aotearoa New Zealand society stimulates trust in other people by ensuring that there are incentives for an individual's engagement in trustworthy behaviour as stated below:

I think the biggest reason people in New Zealand trust each other is because of the "honest environment." The entire society always emphasises the importance of being honest and trusting each other. (Hui-gyeong)

In New Zealand, honesty is essential as this society trusts its members. You know this society operates on trust, and if you say something, this society trusts it one hundred per cent from the starting point. Because of this, if inconsistencies are revealed, the society becomes strict with those matters. Imagine someone whom you trust in a whole-hearted manner, and it turns out that person is not trustworthy; you feel betrayed and violated. Likewise, I consider that this society is strict on this matter as well. (Jin-hui)

These statements imply that Aotearoa New Zealand society is regarded to support a high level of integrity. Thus, individual members of the society are expected to behave honestly and not engage in dishonest behaviours. The participants emphasised the importance of keeping this expectation on honesty. In this social atmosphere, the risk of individual engagement in honest behaviours is much lower as honest behaviours are expected mutually in social interactions.

The strategy of retroductive inference, a central tenet of CR-informed data analysis, allowed this example study to arrive at the conclusion that the sense of safety in the social atmosphere functions as a key condition required for the social structures (characterised by the participants as being open, supportive, relaxed, and fair) to activate and result in observed preliminary trust tendencies.

Conclusion

The ontological map of CR provides a layered understanding of reality that acknowledges the existence of inherent causal mechanisms at the deepest layer of real reality that can generate other forms of reality, including events at the middle layer of actual reality and corresponding experiences at the surface layer of empirical reality. This article has explicated this unique philosophic position of CR compared to positivism and constructivism. The subjectivist epistemological position of CR allows an iterative reasoning process to identify the knowledge related to each layer of reality. At the empirical reality (a domain of experiences), data collection and a series of coding processes proceed to identify preliminary tendencies emerging from people's experiences of the social events under study. In the actual reality (a domain of events), abductive reasoning allows researchers to formulate ideas about how identified preliminary tendencies are connected to the events occurring in the actual reality. At the deepest level of real reality (a domain of mechanism), retroductive inference attempts to conceptualise key conditions for the actualisation of causal mechanisms or structures to produce events and corresponding experiences. The ability of CR-informed research to uncover causal mechanisms inherent in the deepest realm of reality can be beneficial for social work researchers, particularly those who want to elicit changes at the levels of structures, systems and processes. CR's ontological and epistemological positionality offers a sound methodological approach that social work researchers can employ to study particular social events in their social contexts.

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