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Causal Layered Analysis

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Causal layered analysis (CLA) is an emerging qualitative methodology that allows the deconstruction of complex social issues. Originally a futurist's theory and method, CLA was designed to allow assessment of worldviews and cultural factors, as well as social, economic, and political structural issues to be considered in formulating alternative projections of the future. This assessment of deeper individual and collective processes should be inherently attractive to community-based researchers. In this chapter, we describe the theory underlying CLA, briefly outline the steps involved in conducting CLA, and describe its benefits and drawbacks. We then provide an example to demonstrate CLA's potential to deconstruct and analyze complex social psychological issues and argue that CLA is an important addition to the methodological armamentarium of community-based researchers.

INTRODUCTION TO CAUSAL LAYERED ANALYSIS

Valuing Context in Community-Based Research

The nature of community-based research requires a deep understanding of the social context. Unfortunately, positivism remains the dominant scientific epistemology for the social and behavioral sciences, despite a longstanding critique concerning its applicability to understanding the complexities of social and community phenomena (Breen & Darlaston-Jones, 2010; Polkinghorne, 1983, 1988). Pepper (1942) created a typology of scientific approaches, each with its own philosophical underpinning—mechanism (positivism), formism (trait and individual differences), organicism (holistic organic systems), and contextualism. Contextualism is one position that appears appropriate for community-based research.

In contextualism, people are not seen as discrete entities but are conceptualized as sharing similarities and differences with others in their contexts. Altman and Rogoff (1984, p. 24) defined this approach as "the study of changing relations among psychological and environmental aspects of holistic entities." There are a number of features to the epistemology of contextualism. First, it is assumed that the context, time, and a person's behaviors and actions are inseparable. Second, this approach acknowledges that notions of change in any direction are a continual process of all psychological phenomena. Third, it focuses on the contemporary events and determines the patterns and structure of phenomena. Fourth, it argues for the use of multiple observers who participate in different contexts and who investigate the same event. The complexity of this approach emerges not from the latter points but from the first point; the notion that people are not separable from context is contrary to lay understandings of what it means to be an individual and the central assumptions within mainstream understandings in disciplines such as psychology (Burr, 2002; Dashtipour, 2012; Hayes, 2002). This counterintuitive notion of people as part of context makes researching contextualism complex. Even in this previous sentence it is linguistically difficult to describe people as part of context, rather than being separate from context.

CLA emerged from futurists within the broad domain of planning and reflects postmodern thinking in the process of assessing the developments of future strategies and outcomes as part of community and societal planning (Inayatullah, 1998). Specifically, its development reflected concerns about traditional scientific planning whereby

projections about what may occur in the future were based on what has happened in the past. This fundamentally linear approach to assessing potential outcomes was recognized to have shortcomings in that it does not reflect changing circumstances in societies and at international and national levels. In some ways, the critique parallels the rise within community-based research of concerns about the relevance of traditional treatment modalities based on positivism and the recognition of the need to be aware of social contexts. Users of CLA conceive of people as being part of context and not separable or meaningful outside of context, and, as such, the technique allows a holistic consideration of complex social issues.

LAYERS IN CAUSAL LAYERED ANALYSIS

One of the characteristics of CLA is that it forces the user to address more than the apparent factors involved in social change. In using CLA, researchers deconstruct discourses and narratives according to four conceptual layers (see Table 11.1). The first layer is Litany, which comprises the manifest and obvious events, contexts, and behaviors about which there is little dispute. The next layer is Social Causal, which is akin to a psychological analysis of the systemic social, political, economic, and governance factors that are involved in influencing the observed behavior at the Litany layer. The next layer is Worldview Discourse, in which the unacknowledged, value-based assumptions about the world (Sarason, 1981) are articulated. The fourth layer is Myth Metaphor, comprising glimpses of underlying cultural aspects that emerge through narratives and are the participants' attempts at explaining emotions and symbols in a language that is not available to abstract processes. This layer examines cultural archetypes, stories, symbols, imagery, fables, metaphors, and the social rules that may be so engrained in a culture that they go unnoticed. The complexity of cultural values, stories, and archetypes found at the Myth Metaphor layer often manifests across all of the layers, even the descriptive content depicted in themes at the Litany layer. In dealing with these two latter layers, then, it is important that we resist the temptation to individualize them. Instead, we adopt an approach that reflects Sarason's (1981) notion that worldviews are largely collective, and, as such, it is important that the Worldview Discourse and Myth Metaphor layers reflect these collective understandings.

Given the foci of each layer, the deconstructed discourse will vary in specificity from the largely personal and idiosyncratic descriptions within the Litany layer to the systemic issues within the Social Causal layer, to the cultural and collective layers of Worldview Discourse and Myth Metaphor (Bishop & Dzidic, 2014). An important strength, then, of this approach to analysis is that it does not limit the phenomena to being studied solely at an individual level (as Campbell, 1957, warned against) but instead incorporates an explicit examination of people within their social, structural, and cultural contexts. CLA allows us to make the assumption that people are both different but also the same. There is an inbuilt process that resists the temptation to treat people as discrete individuals, but rather sees people as both having some unique characteristics and histories (which are emphasized in the Litany and Social Causal layers) and being part of a broader society with common cultural understandings and histories (as depicted in the Worldview Discourse and Myth Metaphor layers). In this way, CLA has some conceptual similarities to the ecological systems theory of Bronfenbrenner (1979)

TABLE 11.1: LAYERS IN A CAUSAL LAYERED ANALYSIS

Layer	Focus of Concern
Litany	What we say—the overt or descriptive everyday experiences
Social Causal	What we do—the relationships between people and settings, social systems, and structures
Worldview Discourse	How we think—the perspectives, values, meanings, and positions that are often illustrated through one or more discourses
Myth Metaphor	Who we are—the deep, mythical stories and social/cultural archetypes relevant to the issue

Source: Compiled from the following: "Solving the Futures Challenge—All You Need Is a 3LA," by M. Barber, 2010, *Futures, 42*, p. 171; "Multiple Level Analysis as a Tool for Policy: An Example of the Use of Contextualism and Causal Layered Analysis," by B. J. Bishop, P. L. Dzidic, and L. J. Breen, 2013, *Global Journal of Community Psychology Practice, 4*, p. 5; and "Dealing With Wicked Problems: Conducting a Causal Layered Analysis of Complex Social Psychological Issues," by B. J. Bishop and P. L. Dzidic, 2014, *American Journal of Community Psychology, 53*, p. 17.

or the ecological approach of community-based disciplines (Jason & Glenwick, 2012; Kloos et al., 2012; Nelson & Prilleltensky, 2010).

Currently, the two dominant approaches are either an interpretative approach for analysis of nonnumerical (e.g., textual, visual) data or a facilitation approach for the collection of group-based data derived through workshops or focus groups (Bishop, Dzidic, & Breen, 2013). For example, CLA has been used as a method of analysis to examine a varied array of phenomena of interest to community-based researchers, including farmers' perspectives on land management policy in rural Australia (Bishop et al., 2015), traffic congestion in Bangkok, Thailand (Inayatullah, 2004), and natural resource management in the context of climate change in Australia (Green & Dzidic, 2013; Hofmeester, Bishop, Stocker, & Syme, 2012), and it has been used as a methodological framework in the areas of Aboriginal and Torres Strait Islander mental health, constructions of disability, and regional community needs.

Steps in Conducting a Causal Layered Analysis

Conducting a CLA typically involves five steps. The first step requires the conceptualization of a research question that inquires about the depth and complexity of the phenomenon of interest. The second step necessitates familiarization with the data and the context within which the data were generated. Third, excerpts from the data are coded according to the four increasingly complex layers (from the Litany, Social Causal, Worldview Discourse, and Myth Metaphor), capturing the surface issues all the way to the deep explanations. Next, the data are analyzed to identify themes within each layer. Thematic analysis can be used to achieve this within-layer analysis. The final step involves a narrative reconstruction of the phenomenon of interest. Existing theory and findings may be used to aid interpretation of the data. This reconstruction is driven by the research aim/questions and presents a consolidated interpretation of the complex underpinnings of the issue.

Strengths and Challenges of Causal Layered Analysis

A strength of CLA is that, by focusing on increasingly complex layers of interpretation, it promotes a depth of analysis that might not be apparent otherwise in other analysis methods. All too often, community-based researchers attempting to analyze qualitative data struggle with the need to identify discrete themes. CLA, on the other hand, facilitates the recognition that the emerging themes may be simultaneously linked but vary greatly in complexity. Specifically, some themes are more overt and descriptive, while others may be symbolic, metaphorical, or reflect broader cultural and historical influences.

Similarly, this attention to depth and complexity means that CLA provides a framework for analysis that allows (and expects) a contextual interpretation of the topic area. CLA may be especially useful when analyzing data where participants' reflections on the topic of inquiry are diverse, appear to reflect different contextual factors relating to values and worldviews, and include potentially illustrative discursive patterns, for example, common terms or group-specific jargon and imagery. Ultimately, the processes of deconstructing and reconstructing the issue lend CLA to understanding the real-world implications associated with the issue being explored.

Given the comparatively recent development and adoption of CLA as a methodological and interpretative approach within psychology, the approach may suffer from an apparent lack of familiarity from both potential users of the technique and the target audiences (e.g., policymakers, journal editors and reviewers, funding bodies), which may act to dissuade community-based researchers from its adoption. For instance, although many researchers, funders, and policymakers have some awareness of such techniques as thematic analysis or methodologies such as grounded theory or participatory action research, we find ourselves always having to explain even the basics of CLA. Furthermore, the analytical process takes time and requires the researcher to think critically and in greater depth than what might be expected for some other techniques for the analysis of textual data. This is particularly pertinent given the expectation that the researcher will be required to analyze transcripts with the purpose of identifying not only themes pertaining to individual experiences but also themes reflecting deeper cultural mythologies and collective understandings about the topic being explored. We are hopeful that these challenges involved in conducting a CLA will dissolve in time; familiarity with the approach may decrease

anxiety associated with the unknown, assist in the analytical proficiency that comes with practice, and similarly assist in the uptake and translation of findings by the end users of such research.

CASE STUDY

Background

To illustrate the processes and potential applications of CLA, we focus on a relational women's sports community. The social, emotional, and physical health benefits that come from adopting a physically active lifestyle are well documented (Coleman, Cox, & Roker, 2008); so too are problematic trends associated with maintenance of physical activity as women age. For example, Australian women's level of participation in organized sport declines with age, with a noticeable decline as early as prior to their completion of high school. Participation in organized sports is noted again to decrease during years associated with childrearing, only for participation in physical activities to gain in popularity in retirement years. Noteworthy is that the participation changes with age, with women tending to engage in solitary and informal physical exercise (e.g., walking) as opposed to organized group activities. However, engagement in group exercise, which encourages social engagement between participants, is noted to result in better health outcomes for participants, both physically and psychologically (Jewson, Spittle, & Casey, 2008; Martin, Terence, & McCann, 2005).

One sport demonstrating a growing level of participation by women is the sport of flat track roller derby. Research that considers roller derby explicitly is somewhat limited, as are studies that capture the demography of the skaters in Australia. Research that does report on women in sport more generally and from health science and public health positions tends to explore women's participation in sports according to notions of body image, physical health and well-being, and for the promotion of physical activity and well-being during the life span (e.g., Krane, Choi, Baird, Aimar, & Kauer, 2004).

The limited research that considers roller derby explicitly tends to do so from a gender studies perspective (e.g., Finley, 2010) and is centered on exploring the gender roles and gender maneuvering of women who participate in the sport, but it does little to understand the contribution that the sport gives to the lives of women that participate. The analysis of women's participation in sports tends to be focused on sports that are traditionally male-dominated or draw on stereotyped masculine behaviors, such as aggression, physical strength, or competitiveness (Coleman et al., 2008; Ezzell, 2009). Such studies endeavor to make sense of how women negotiate their identities and conflicting expectations relating to their participation in the sport. There is a tendency within the literature to consider participation of children and adolescents, particularly adolescent females, and barriers associated with active lifestyles, with limited consideration of the motivating factors of women in their 20s and 30s and through to middle or later life. This is despite recognition of the physical, psychological, and social benefits of engaging in physical activity, particularly in later life (Stephan, Boiche, & Scanff, 2010).

Anecdotal information from roller derby publications, social networking sites, and league Internet home pages suggests that the roller derby community in Australia is strong and growing. Furthermore, references to strong, empowered women imply that there is "something" about roller derby that is attracting women to pursue the sport. The Women's Flat Track Derby Association (WFTDA) conducted annual participation surveys in 2010, 2011, and 2012 of roller derby skaters worldwide. In 2012, the average age of skaters polled was 31 years, with 59% between 25 and 34 years, and 27% were 35 years or older. Furthermore, 30% of the skaters reported a household composition that included children 18 years or younger (WFTDA, 2012). The age of skating participants in roller derby and the overall growth of the sport warrant further investigation. For example, is roller derby more than a sport, and if so, how? Understanding what it is that attracts women to participate in organized sports, particularly in the age bracket that suffers most from underrepresentation, may contribute to uncovering factors that can bolster and support women in their pursuit of physical activities at a group level.

Contemporary flat track roller derby is recognized as a grassroots, full-contact sport designed by women for women. As the sport is played on roller skates and requires high-level athletic endurance and agility, it differs from more traditional sports available to women. This is due not only to the level of physical contact and force demanded of players

but also to the fact that the sport is not a variation or adaptation of an existing sport played by men. To illustrate, it is assumed that roller derby be played by women and that, therefore, male leagues will feature the prefix "male" and will follow the rules determined originally for women's participation. Unlike other organized sports in Australia, there is no specific governing body or formal competitive roster; rather, leagues are established and managed by groups of interested women at a grassroots level.

Methodology

The following excerpts were drawn from transcripts of interviews with 11 women roller derby players reflecting on their experiences of playing the sport. Due to the low participation rates of women in organized sports (for the reasons outlined earlier), the overarching aim of the research was to explore women's participation in roller derby.

The data were analyzed by first coding interview text into the four categories, line by line. It is worth noting here that not all of the text must be coded and multiple coding (i.e., coding to two or more layers) can occur. This initial coding to the four layers focused on "best fit" and allowed "miscoding" to be identified to ensure that text coded to Litany only included uncontested observations and events, Social Causal only comprised structurally caused events and explanations, Worldview Discourse only encompassed individual and collective ways of viewing social action, and Myth Metaphor extracts only related to stories and emotional components of actions and events. Once we were satisfied with the categorization and coherence of coded text, we conducted a thematic analysis within each layer to identify common and contrasting themes. Given that the example we include here is for illustrative rather than definitive purposes, the thematic analysis is speculative and consistent with Polkinghorne's (2004) reflective understanding or Peirce's (1955) abductive reasoning.

As with any analysis technique, rigor and quality are essential. Bishop and Dzidic (2014) recommended the use of two primary strategies—reflexive journaling and peer coding. Reflexive journaling involves the identification of the researcher's epistemology, his or her own positions (including values and worldviews in relation to the research topic), and the ways in which these positions influenced the choice of topic, data collection, and analysis. Within the current research team, the second author was actively involved in roller derby as player and volunteer in a league, the first author has participated as a spectator at a few roller derby bouts, and the third author has no involvement in the sport. As a research team, we possess insider and outsider perspectives on the phenomenon of study. Throughout the project, we maintained written summaries of the research activity, ideas about coding and relationships between codes, and reflections on the data. Documenting our positions and perspectives on the data enabled a rigorous approach to reflexivity in interpreting the women's stories.

The second strategy, peer coding, involves working with one or more co-researchers to discuss the data and share preliminary interpretations of those data. We worked together as a team to independently read the transcripts and code to each layer. We then met several times to share codes and compare and contrast differences. Once we were satisfied with the coding to each layer, we worked together to identify the themes within each later. These discussions, particularly the sharing of alternate interpretations, are fruitful in the development of a strong and defensible CLA.

Findings

Table 11.2 provides an illustration of each CLA layer, the themes within each layer, and exemplary extracts. The women described roller derby as demanding on their time and relationships. They reflected on the degree to which players provided each other with mutual support, both within and outside of the game, and that existing relationships external to roller derby were often strained due to the level of commitment to the sport. The participants described roller derby as boosting their confidence and redefining who they were; this is particularly evident in the player's choice of "derby name." The name is typically a play on words, whereby phrases or names (e.g., of celebrities) are modified such that the result is "tougher." The name may also utilize humor, be overtly or covertly sexual, make reference to dynamics or qualities of the sport (e.g., rolling, wheels), and reflect qualities of the players' personalities or espoused identities. The discourse also identifies and formalizes the relationships between members (e.g., "Derby Wife" is a term used to describe a player's best friend in the league). The underlying grassroots and feminist

TABLE 11.2: THEMES ACCORDING TO THE CAUSAL LAYERS AND EXAMPLE EXTRACTS

Layer and Themes	Example Extracts
	Litany
Demands on time	Depending on what level and league you're skating at, it can be between anywhere between three or five nights training.
Identification as athletes	My personal best at the minute is 29 laps in five minutes of the derby track, so that is one every five and half seconds . . . . I would like to be able to do 31, which is one every, like, 4.9 seconds.
	Social Causal
Strong sense of community	At the beginning of the year, one of our skaters went down and she's kind of new to the league and she broke her arm, she broke both her bones in her arm, and she couldn't drive so we sort of organized obviously meals brought to her house, we had a "meals on wheels" sort of thing going on, and people drove her places particularly to doctor's appointments and things like that.
Complexity of relationships	In most leagues, everybody trains together and then on bout day there are two teams that play each other on the track, so people who you are friends with off the track and people you regularly socialize with become your competition on game day. Everyone has to kind of negotiate that in some way mentally, I guess, as preparation.
	Worldview Discourse
Transformation	At first it was all about becoming a "badass" derby skater who wore a tutu and fishnets and now it's all about the friendship and the fitness and . . . . I guess the personal growth it has given me; the fishnets and the tutu don't matter anymore.
A roller derby identity	It is kind of like my world is becoming roller derby. Like, people who play netball don't come to work, you know, and promote their netball games and talk about the bruises that they got . . . . Their netball friends are just sort of like one side of their friends but they're not a big part of their life as far as I can tell.
Space for all women	. . . and everyone is an individual and everyone is okay with the fact they're an individual. You know you've got your tattooed, pierced people who are really into their heavy metal and there's . . . we've got a lawyer . . . yeah we've got doctors and nurses and people whose job I don't actually know what she does but she has a pager and if it goes off she runs away um and there are mums and there are gay people and there are straight people and there are people who aren't quite sure what they are and just . . . it's really inclusive . . .
	Myth Metaphor
Having it all	. . . but I know that at some point, like, roller derby can't be such a big priority in my life forever because other things kind of get dropped, like, as you get more and more involved like, you know, um just seeing your friends outside of roller derby becomes a bit of an issue [laughs] or the ones that don't play, you know, so I can imagine, like, I'm glad that I don't have children because I can imagine that can be a huge hassle [laughs] if you play roller derby so imagine, like, later on in life um I would probably choose not to play roller derby and have a family or something like that instead.
Sport versus spectacle	There's never any sort of performance within the game but obviously you know you dress up and you wear fishnets and you sort of express that sort of side of yourself as well like . . . but in terms of performance as such there's not really any on the track.

ideology resonated with the participants' conceptualization of the sport as a domain of women.

As women, the multiple and competing roles meant personal sacrifice was required and that it was not possible for them to "have it all" at once. It was not uncommon for the participants to renegotiate their participation on an ongoing basis, particularly in instances where significant others or loved ones objected to the level of participation to the league. Additionally, they were aware of the risk of objectification, whereby players may be expected by the paying public to perform an ascribed sexualized role. The participants' stories illustrated how the legitimacy of women in sport, being skilled, having strength, and ultimately having power, is trivialized. Given this, although participation in roller derby may present within Western cultural contexts as an avenue in which the cultural construction of women could be challenged, the game continues to operate within a context that values dominant cultural constructions of gender.

As can be seen in Table 11.2, the process of coding within these layers of increasing depth and complexity prompts the consideration of the same issue from an individual (Litany) perspective, a systemic (Social Causal) perspective, a values (Worldview Discourse) perspective, and a cultural archetype (Myth Metaphor) perspective. Although not included in the present chapter because of space considerations, the final stage of a CLA typically involves a narrative reconstruction of the data from the four layers and the intralayer themes. In presenting the findings in the narrative reconstruction, each layer is described separately, with subheadings for each within-layer theme and the inclusion of interview or text extracts (Bishop & Dzidic, 2014).

CONCLUSION

CLA explicitly requires its users to take an ecological approach in examining phenomena and therefore is well suited to community-based researchers. However, CLA can be a daunting methodology, particularly to the novice or early career researcher. Typically, qualitative methods are about exploring the experiences of people within certain contexts. CLA offers community-based researchers the opportunity to delve deeply into context. In the case of women's participation in the organized sport of roller derby, the analysis using CLA revealed not only individual experiences of the sport and its demands, identity formation, and transformation but also a much more complex story about these same experiences embedded within the paradoxical nature of inclusion and community, and the at times conflicting social constructions of both "woman" and "athlete." As can be seen in the earlier example, CLA facilitated a deeper level of analysis and the uncovering of broader social and cultural understandings of the roles and expectations of women in modern Western societies.

It is through conducting an in-depth contextual analysis of data afforded by CLA that the community-based researcher is equipped with greater insights regarding the propensity for change and intervention. For example, if the intent was to explore mechanisms to support women's participation in sport, a less complex analysis may have led us to the conclusion that supporting the development of a sense of community within leagues and exploring women's empowerment might be options. Arguably, the deeper analysis achieved through conducting a CLA enabled the identification of more complex issues pertaining to broader cultural attitudes regarding the role and construction of women. The construction of women appeared to present operational and interpersonal challenges for the participants. This privileging of context places CLA as an important tool for community-based researchers.

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