

“NOTHING GREEN CAN GROW WITHOUT BEING ON THE LAND”: MINE-AFFECTED COMMUNITIES' PSYCHOLOGICAL EXPERIENCES OF ECOLOGICAL DEGRADATION AND RESISTANCE IN RUSTENBURG, SOUTH AFRICA

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Extractive industries have a deleterious impact on social ecologies. Mining is one of South Africa's main industries, and communities' resistance takes place in these extractive zones. This qualitative case study aims to explore and describe mine-affected community members' psychological reactions and community responses to land and environmental injustices in the mining community of Rustenburg, South Africa. Data collection took place in August 2019. Individual semi-structured interviews were conducted with 10 participants who were non-affiliated to the mines, of which four were also interviewed as part of a focus group. Interviews were conducted in English and Setswana after which a thematic analysis was performed. All participants reported psychological distress related to land and environmental injustices, specifically place severing and environmental health-related distress. Community resistance is aimed at preventing further harm and re-establishing connection to place through land restitution. Further studies on place severing and environmental-health related distress is warranted and possible opportunities for community psychologists to support these environmental justice struggles are highlighted.

Keywords: Place severing, land justice, environmental justice, extractive industry, climate change.

1. Introduction

Today, three-quarters of the Earth's land has been converted mainly for development purposes (Díaz, et al., 2020). In South Africa, mining has contributed to mass land conversions and land injustices (Gibson, 2009; Neke & Du Plessis, 2004; Ntsebeza & Hall, 2007). Land injustice is defined as the dispossession and impediment of land rights, which may include unwanted human-induced place disruptions and lack of ancestral land tenure (Ntsebeza & Hall, 2007). Under apartheid, large areas were deemed homelands, an administrative system created to remove Black South Africans from “white” territories controlled by the apartheid regime (Price, 1986). The establishment of the former Bophuthatswana homeland, in what is today the North West province, stripped more than two million South Africans of their citizenship (Manson & Mbenga, 2014). Mining companies were said to have exploited homelands by mining land without compensating communities (Manson & Mbenga, 2014). Thus, in South Africa, environmental exploitation is intertwined with historical state and corporate oppression (Manson & Mbenga, 2014; Naidoo, et al., 2017). The Land Restitution Act was one of the first pieces of legislation developed in South Africa after the advent of democracy in 1994 to address these historical injustices (Gibson, 2009).

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Today, climate change is one of the country's main threats (Niekerk, et al., 2019) and several extractive companies operating in South Africa — for instance, mining giants Anglo-American and Glencore — are among the top 100 greenhouse gas emitters globally (Griffin & Heede, 2017). Certainly, mine-affected communities are vocal about resistance to continued land degradation and environmental injustices (Seoko, 2019). For example, Bua Mining Communities (BuaMC) (2017), which represents more than ten affected mining communities in the Rustenburg Local Municipality, hereafter referred to as Rustenburg. BuaMC has continuously spoken out about the environmental health and ecological burdens disproportionately placed on Black communities (Rauch & Fatoki, 2013). Watkins (2019) emphasises that there are opportunities for community psychologists and other psychosocial accompanists, to become more involved in such justice struggles. Thus, this case study aims to explore and describe mine-affected community members' psychological reactions and community responses to land and environmental injustices in Rustenburg, South Africa.

2. Theorising psychological reactions and community resistance to land and environmental injustices

The capabilities approach to justice is concerned with how the distribution of goods and harms affects wellbeing and supports a fully functional life (Schlosberg, 2009). Each individual and community, in their relationship to their ecology, should define what capabilities are required to thrive (Schlosberg, 2009; Schlosberg & Carruthers 2010). The approach gives an ethical significance to community and ecological health, and finds injustices to both as harmful to community wellbeing. Thus, capabilities approach complements community psychology's aim to advance community justice, empowerment and wellbeing (Nelson & Prilleltensky, 2010). Furthermore, the ecological application of capabilities theory values the flourishing of human existence as part of the broader ecology. Capabilities approach applied ecologically sees nature, including human beings, as having an inherent right to exist, inhabit and contribute to the ever-renewing web of life (Cullinan, 2011; Schlosberg, 2009).

As capability theory is applied to environmental issues, community psychology could be enhanced by theories focusing on the dialogical relationship between people, land and ecology. Fisher (2013) and Twigger-Ross & Uzzell (1996) posit that meaning is co-created with place or nature through embodied relational acts. Jaspal & Breakwell (2014) further suggest that place is not only a part of identity, but a fundamental component of identity formation. Thus, a person's relationship and dialogue with the world can offer a sense of continuity and a person deepens their sense of self through embodied acts in relationship to others, including non-human life (Fisher, 2013; Jaspal & Breakwell, 2014; Twigger-Ross & Uzzell, 1996). Through these relational acts (for instance, farming, ceremony and play), land not only affirms a person's or group's unique sense of identity but also gives rise to a sense of self-efficacy within their ecology, contributing to functionality and wellbeing (Jaspal & Breakwell (2014).

For the purpose of this study, the authors assume that dialogical relationships exist between communities, place and ecologies. These relationships may contribute to mutual wellbeing or they can be harming, as will be explored in relation to land and environmental injustices that are perpetuated in Rustenburg.

For instance, Jaspal & Breakwell (2014) explain that external harms that threaten ecologies can disrupt identity processes. Similarly, place disruptions, or when a person's or communities' relationship to place is harmed, can be experienced as a traumatic process, threatening identity by creating unmanageable change within the ecology (Erikson, 1996; Jaspal & Breakwell, 2014). In this way, place disruptions break down continuity in the identity process and hinder embodied engagements with their ecology that affirm communities' unique identities (Edelstein, 2018a; Erikson, 1996; Jaspal & Breakwell, 2014). Authors have explored the psychological reactions to these changes to place relationships. Solastalgia, for instance, is "the pain experienced when there is recognition that the place where one resides and that one loves is under immediate assault," eroding a sense of belonging and causes distress (Albrecht, 2005, p. 44). However, place informs traditional knowledge systems and disruptions to place may unsettle cultural identities that are rooted in place, which solastalgia may not account for (Chalmers, 2017; Galway et al. 2019; Jones & Segal, 2018; Whitt, et al. 2001). Jones & Segal (2018) highlight a need for theorising on the psychosocial consequences of these disruptions. In this case study, the term "place severing" is provisionally used to name the psychological process associated with harms done to place attachment, including to ancestral land, the unsettling of traditional knowledge systems, intergenerational identity processes and ancestral relationships, stemming from historical land and ecological injustices. Human-induced ecological degradation itself can also be experienced as a traumatic process that can cause considerable community distress (Erikson, 1996). Sociologist Michael Edelstein (2018a) has also explored communities' psychological reactions during and after exposure to toxic contamination related to environmental disasters or injustices and has noted experiences of health uncertainty, loss of social trust, health pessimism, loss of control, inversion of home and place (a change in perception of the environment from being safe to being harmful) and unwarranted social stigma (Edelstein, 2018a).

Coined by environmental humanities professor Rob Nixon, the term slow violence is a central concept used in this study to characterise land and environmental injustices that cause place disruptions and cumulative harms, and thereby limit human wellbeing (Nixon, 2011). Environmental injustice is construed as the disproportionate exposure of predominantly Black, indigenous or people of colour to "pollution, and its concomitant effects on health and environment, as well as the unequal environmental protection and environmental quality, provided through laws, regulations, governmental programs, enforcement, and policies" (Maantay, 2002, p. 161). Meanwhile, slow violence describes ecological harms that are insidious, constantly mutating, often unseen and not easily contained by the community. These harms are associated with ecological degradation, including deforestation and pollution, as well as capitalist extraction, such as mining or industrial agriculture, that extend across temporal and geographic space to create cumulative ecological harms (Nixon, 2011).

Critical community psychology focuses on understanding economic and social power relations with the aims of strengthening community power and resources (Kagan, et al. 2019). Oppressive social processes, presenting as land and environmental injustices, are used in some extractive contexts to disempower communities, thereby, contributing to and perpetuating slow violence (Gaventa, 1982). For instance, communities can be disempowered and oppressed through the active breaking down of space to engage on how goods and harms affect them and their broader ecology (Christens, 2019; Gaventa, 1982; Freire, 1996; Schlosberg & Carruthers 2010; Speer & Hughey 1995). Oppressive forces can do this by not recognising communities, dismantling existing relationships, violence, and top-down decision-making that impede the rights of others, hin-

dering self-determination and leading to dehumanisation (Christens, 2019; Freire, 1996). Furthermore, disempowerment can also occur by limiting public discourse (Christens, 2019). For instance, those who hold power may use their superior resources to buy influence or punish those who challenge power, including by way of strategic litigation against public participation (Centre for Environmental Rights, 2019). Those in power may also construct barriers to participation by controlling topics for discussion and perpetuating myths, including repeating statements such as “mining brings development” or “no damage is being done” or “everyone wants mining” (Christens, 2019; Gaventa, 1982; Speer & Hughey 1995). These oppressive actions can create procedural, participatory and recognition injustices, the last of which refers not only to a lack of recognition of communities concerns and needs but also to the exclusion of a particular group’s interests in processes, decision-making and distribution of goods and harms (Gaventa, 1982; Scholsberg, 2007; Speer & Hughey, 1995). In this paper, we consider the ever-changing and interconnected land and environmental injustices interchangeable with the term slow violence.

Nevertheless, extractive contexts are contested spaces where communities are in a continuous process of resisting injustices and reclaiming their rights (Gómez-Barris, 2017). Community psychology has demonstrated that supporting community structures can be an effective way of accompanying communities in addressing injustices and promoting wellbeing (Kagan, et al. 2019; Nelson & Prilleltensky, 2010). Grassroots community organising groups rely on direct action as well as building alliances, popular knowledge through dialogue and ground-up research, critical education and community monitoring of service provision and harms (Gaventa, 1982; Kagan, et al. 2019; Speer & Hughey, 1995). These grassroots community organising actions are used to gain control in contexts of oppressive or unequal power dynamics (Gaventa, 1982; Kagan, et al. 2019; Speer & Hughey, 1995). In these ways, communities contest and regain control over discourses that affect them, bringing attention to community struggles and needs, as well as rewarding or holding decision-makers to account (Gaventa, 1982; Speer & Hughey, 1995).

However, around the world, these community groups do not only resist oppression, but also imagine and create new realities (Mignolo & Walsch, 2018; Watkins, 2019). Albrecht (2005, 2007), for instance, suggests that community action can help address solastalgia. Furthermore, Larsen (2008) has demonstrated how the rooting of rural social movements in the significance of place can mobilise, unify and motivate resistance. Furthermore, social movements, such as Bu-aMC, have emerged and are less about ideology, but rather about identity, representation and belonging as mine-affected communities (Woods, 2003) As authors, we assume that community action is aimed at mitigating harm, but also at restoring the dialogical relationship to place. Beyond environmental justice, those who have been dispossessed of their ancestral connection to place and experience slow violence may engage in processes that seek land justice for restorative purposes and socio-economic empowerment. Land justice refers to a legally secure process by which land rights are upheld and land is returned or where comparable redress is provided to those whose ancestral tenure was severed in cases of historical injustices (Gibson, 2009; Ntsebeza & Hall, 2007; Republic of South Africa, 1996).

3. Case methodology

This section outlines the qualitative exploratory descriptive case study’s methodology and design.

3.1 *Aim and objectives*

The case study's aim was to explore and describe mine-affected community members' psychological reactions and community responses to land and environmental injustices in Rustenburg, North West province, South Africa.

3.3 *Participant characteristics*

Ten participants provided in-depth individual interviews, all of which were conducted after an initial focus group. Four participants who were interviewed had affiliations with a community organisation representing mine-affected communities, BuaMC. Of those participants, three participated in a focus group of four participants that consisted of traditional leaders and community activists who were able to give a community perspective of environmental and social justice issues. Six participants were unaffiliated to BuaMC and represented a diverse range of perspectives, i.e. community elders, general community members and a community healthcare worker. Participants were non-mine affiliated, were identified as having a good understanding of the various environmental concerns, community knowledge and/or had experienced place change through the introduction of mining in Rustenburg. Table 1 describes participant characteristics.

Table 1. Participant characteristics

	Individual interviews	Focus Group
Male	7	3
Female	3	1
Mean age	58	48
Home language	9 Setswana, 1 Sepedi	4 Setswana
Interviews conducted in Setswana	3	0

3.4 *Data collection*

Data collection took place in August 2019 after ethics approval was granted by Nelson Mandela University's Research Ethics Committee: Human. Participants signed dual English and Setswana consent forms prior to being interviewed. Interviews were conducted in English and, when necessary, translated to Setswana by a cultural interpreter. The primary researcher, a male clinical psychologist, conducted the interviews. Purposive snowball sampling was used to identify adult community members who had experienced social ecological changes. The initial participants were identified through a member of BuaMC, after which snowball sampling relied on community members interviewed. Eight out of 10 participants were indirectly accessed through the original member. A possible sampling bias is possible in that most participants were identified through a member of BuaMC. Barnwell worked in Rustenburg in 2016 in advocacy related to sexual violence and mining, thus having contact with two people who were also included. All interviews were directed by a semi-structured interview guide, which consisted of non-directive questions. One focus group representing people who had close proximity to the issues being studied, including community activists and traditional leaders, was held prior to individual interviews taking place. This focus group allowed the researcher to explore pertinent environmental justice themes with

those who have a broad view of the community. All focus group participants were also individually interviewed to allow them an opportunity to share detailed personal experiences or elaborate on themes not completely covered in the group. A collection bias may have been created through this collection strategy in that four participants received more weighting owing to being interviewed individually and in the focus group. Saturation was reached when themes repeated themselves and this took place by the tenth interview. There were no refusals or dropouts. Permission was obtained to collect data on premises convenient to the participant, either in the home or in community centres. Interviews lasted between 30 to 180 minutes and were recorded and transcribed verbatim. Three interviews were translated from Setswana to English for transcription purposes.

3.5 Data analysis

The main researcher performed the thematic analysis, including data coding and analysis. Data was managed with NVIVO qualitative data analysis software. First, every interview was coded in detail and themes were derived from the data. Each participant response was assigned an *in vivo* code. *In vivo* coding assisted in allowing grounded themes to emerge through data analysis (Manning, 2017). These codes were then grouped into clusters of meaning related to forms of slow violence, their impacts on psychological well-being, as well as community action that emerged as themes and subthemes. Once this process was completed, each theme was recoded to ensure that there was coherence in meaning. Coded material that could not be integrated into any of the themes or did not repeat itself in interviews was discarded. Preliminary themes were discussed with Bu-aMC members owing to their proximity, historical overview of community issues, and technical understanding of environmental justice challenges. The latter process was not to distort any of the themes via external influences, but rather to consider interpretive validity, i.e. ensuring the themes emerging are considered to be contextually appropriate to the issues described (Chalquist, 2020). This approach also allowed the researcher to conduct accuracy checks and to clarify information. The study did not expect participants to name the technical terms for specific forms of land and environmental injustices. However, these categories of injustice were used to identify communities' various experiences. Furthermore, the slow violence assisted in conceptualising and organise the process of environmental harms and associated social processes over time. All participants have been anonymized and are referred to by a code throughout this study. For instance, "P" refers to participant, while the participant's interview number is placed afterwards, such as P1. The focus group participant quotes are denoted with the letter "G". It should be noted that P1 through P4 were both individual and focus group participants.

4. Findings

The presentation of findings follows the process of the psychological reactions and community responses to different forms of land and environmental injustices in the extractive zone. Figure 1 presents the themes and subthemes that will be discussed in the findings, illustrating how they are interrelated.

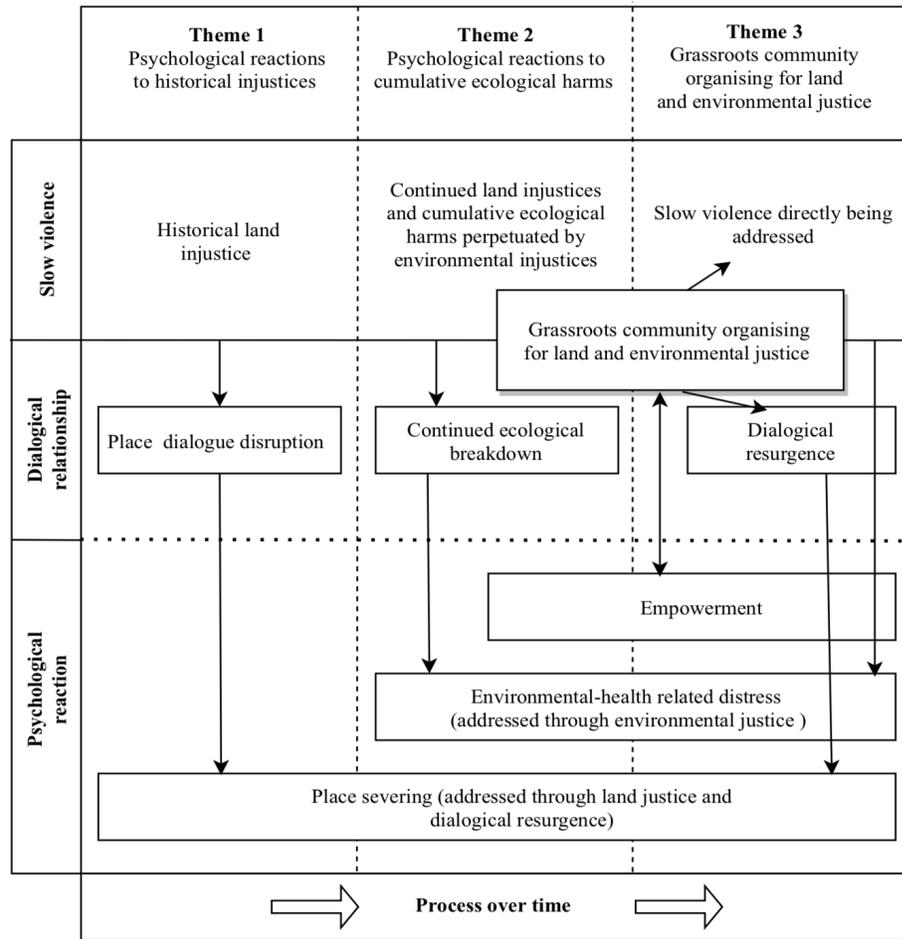


Figure 1. Community psychological experience of slow violence

The X-axis depicts the process of land and environmental injustices and trauma over time, beginning at the point of place dialogue disruption owing to historical land injustices. The Y-axis from the top presents of *slow violence*, then the experience of the *dialogical relationships* that informs identity and experiences of place disruptions, that are then followed by the *psychological reactions*. Arrows indicate interrelationships between subthemes. For instance, *place dialogical disruption* owing to historical land injustice leads to the psychological experience of *place severing*, which will further be described in Theme 1.

4.1 Theme 1: Psychological reactions to historical land injustice

The subthemes in the first theme *psychological reactions to historical land injustice* characterise the place dialogue disruptions that have taken place owing to historical land injustices and then explore the psychological reaction to this ongoing disturbance in the subtheme *place severing*.

Historical land injustices and place dialogue disruption

All participants identified apartheid-era land injustices and the extractive industry, i.e. mining and the associated economy, as the main drivers of social ecological changes in Rustenburg. Six participants emphasised that apartheid-era land use changes associated with extractive industries occurred on ancestral land: “We grew up cultivating [on] our own farms — but then our land was taken by the mines, which resulted to us not having farms. The entire place is now a mine,” highlighted participant 9. Meanwhile, participants expressed that lands were ancestral, “During the apartheid era, a black man was not having powers to own land or to register [ancestral] land on his name,” Participant G2 said. Land restitution remains a central issue in South Africa and several Rustenburg families and communities are involved in land disputes with the government’s Minister of Land Reform and the local traditional authority, the Royal Bafokeng Nation (Bafokeng Land Buyers’ Association, 2020). To participants, these past injustices therefore present as intergenerational land-based traumas that continue today, and are referred to hereon as a form of slow violence. Participants were deeply concerned about mine-related land conversions that have taken place on what was allegedly ancestral land. For instance, Participant 9 described how these land conversions transformed her lifestyle and that of her society:

I miss my grandfather going to the farm with the tractor. We didn’t even eat the mielie [maize] that we eat these days. We used to eat mabele [sorghum] porridge. The farms had cows and basically everything. My grandfather used to slaughter cows every winter for us. [We’d] drink milk without buying it.... Now, I remember very little. The place is full of mines.

Furthermore, four participants also reported biodiversity loss and changes in the landscape as stressors that have emerged through these land conversions. Participant 5 described the significance of this loss:

The forests [are] important for the survival of the animals and the birds. It’s a whole ecosystem. If you want to be particular, a cow can live a healthy life if there’s a particular bird living in that area because that bird helps to remove the ticks. If that bird is not around, that animal is likely to suffer, you know, from illnesses.

Place severing

Place severing is a preliminary term used in this paper to describe a novel psychological process by which participants’ mutual psychological dialogue with the place is hindered, strained or severed. In Rustenburg, the authors theorise that mining and associated land dispossession, which removed people from ancestral lands, marked a change in their relationship with place that contributes to psychological distress today. Communities spoke directly about the importance of land restitution and the importance of being able to decide what happens to land in their community. Conceptually, an extractive worldview associated with mining and apartheid was introduced into a society where identity was interconnected with land through farming and ancestral burial grounds, for example. Land conversions and dispossession severed people’s relationship with land, resulting in a dialogical breakdown between person and place. It also challenged participants sense of manageability over what took place within their community. For instance, participants no longer

had control over what took place on their land, such as the removal of graves or mining that destroyed former grazing areas. Neither did they perceive to benefit from the mineral wealth. For instance, some traditional elders were said to have lost their power and saw the erosion of the traditional system since the extractive industry was introduced. It was explained that the Apartheid regime allegedly favoured one traditional authority over others and land rights now are held by these authorities. Distress and resistance was therefore attributed to international identity loss, but also a lack of controllability over land and the environment at present and in the foreseen future. All participants identified the ecological changes linked with mining and land dispossession to be associated with their psychological distress. As focus group participant G4 said, “[it was] very difficult to experience that change.” Participant G2, for instance, stated: “It’s very painful and also it is disturbing the culture. It is also disturbing our tradition as Black people.”

Changes to the embodied relationship to land disrupted the continuity of intergenerational identity. Relatedly, intergenerational knowledge loss was a common theme experienced by five participants, one of whom stated: “Because of the disturbance by the mining operation, we can’t even show [the youth] to tell them this is what we had before and all the animals that we had. We don’t have them anymore” (G2). Five participants had internalised the pain: “It makes me sick and miserable when I think about the old days and how things were during that time compared to now” (P7). Participant 8 felt disassociated from the experience and comments on a disruption of identity (“belonging”): “There’s nothing I can feel as I do not know what to feel. I don’t know what to say because the mine took what belongs to us”. Participant 3 compared his feelings towards the past with his concerns about the current ecology: “I grew up in this village where there was a good environment... but living in this environment, it’s not like the same as those old times”. These changes were said to have implications for ancestral relationships to the land today. Participant 4, for instance, described recurring dreams associated with ancestral connections: “The last dream that I had as regarded the land. I saw my grandfather. I saw my grandfather standing in front of the gate, it was at his house that side, talking to me about the land”. Participant 9, who had been forced off his ancestral land, remembered: “I was very sad because what was happening to me needed someone with knowledge”. This participant explained that he still discusses these issues of land and mining with his ancestors, and goes to clean their graves: “I’ve done it annually to go and clean the graves.”

Participant 6 thought that the way of relating to the other-than-human world had also changed: “Things have changed, because we no longer respect the trees. You go to my area there is no tree in each household. Our society thinks that if you grow a tree, you are abnormal.” These statements may suggest a transformation of worldview where there was a closer relationship with nature to one that is more distant and disconnected, which may further permit resource extraction.

An extractive worldview commodifies (turn into a commodity what has inherent rights) and objectifies (degrade the status of something) ancestral land, which places those who resist it in direct psychological conflict with the new extractive system. However, this was not the case for one participant: “We lost the land but nothing much changed. From where I am coming from or based on my upbringing, we don’t really believe in ancestors” (P8). This participant also reported that the advent of mining in Rustenburg also brought positive advances, such as access to water and electricity: “I see the changes as positive change because we have water in the households now, we can erect toilets that flush. Life is so much better than before” (P8).

Interestingly, Participant 8 may have been able to integrate elements of the extractive worldview as a form of psychological adaptation. She reported that she did not follow traditionally practices and had converted to Christianity. Still, some aspects of the change were difficult for her

to integrate. For instance, Participant 8 also reminisced, “I miss that place, I miss my grandfather’s cows, goats and donkeys.” However, most participants interviewed described the loss of traditional knowledge systems as a distressful experience. Participant 9 recounted: “Before things were done differently. For instance, if there was no rain, then there will be rituals to perform so that it rain[s]. Today, those practices don’t exist anymore”. The above experience speaks to cultural erosion and loss.

All participants ultimately recognised the benefits of access to municipal services and were not calling for atavistic changes, but rather re-establishing a dialogue with land through land restitution. If place severing is interlinked to powerlessness associated with land and environmental injustices then it is possible that they can be prevented, mitigated and/or healed through community reclaiming their rights through resistance and resurgent actions, for instance. Research suggests that the significance of place — and therefore — shared meanings of place severing can be a unifying, mobilising and empowering for communities resisting ongoing extraction (Larsen, 2008).

4.2 Theme 2: Psychological reactions to cumulative ecological harms

This theme focuses on the *psychological reactions to cumulative ecological harms* illustrating the psychological reactions vocalised by participants. The theme first focuses on the cumulative ecological harms (i.e. *water and climate injustices* and *environmental pollution*) that were perceived as being directly rooted to the extractive industry and the further entrenchment of historical land injustices and then more specifically on environmental-health related distress. All participants reported a broad range of dysphoric experiences. Generally, psychological distress was diffuse, but was said to relate to the land and environmental injustices that make up the experience of slow violence. Only one participant did not perceive any subsequent environmental injustice as a threat, but this participant did identify land dispossession, or the forced removal from her home and ecology, as a historical injustice that was important for her in terms of land restitution.

Water and climate injustices

The majority of participants (n = 8) reported *water and climate injustice* as psychosocial threats. Climate change compounds water scarcity that is associated with the introduction of mining, poor infrastructure and water demands in Rustenburg. Water scarcity is considered to be the lack of water available in a certain area to meet the demands of the given population and surrounding industries (White, 2014). Mines are perceived to compete with residents for scarce water resources. Poor infrastructure and ongoing droughts contribute to current water scarcity. Participant 3 described: “Now, the water supply is very scarce.” Participant 7 recounted how water reservoirs have changed: “There used to be a stream here, but it doesn’t have water anymore. There used to be a dam or river here where we fetched water”. Participant G2 attributed the scarcity of water to mining: “You can go around the village... We don’t get water anymore from those boreholes because they are being damaged by the mining”.

Participant 7 described climate changes that have already taken place: “Back in the day, it used to rain a lot. We knew that it would rain in August, which was the first rain in the year”. She then compared that with the present times: “All I can say is that there is no rain.” Half of the total participants expected climate change to exacerbate water injustices: “Now we are very scared about this mine. As I have stipulated earlier on, this mine — when it comes — we are very scared

that the water underground, it might disappear” (P3). Climate change does not only pose a risk to human life, but is perceived as an existential threat to other-than-human life in Rustenburg.

Environmental pollution

Environmental pollution was the second most reported perceived environmental threat (n = 5). Participants described forms of environmental pollution included water and air pollution, as well as exposure to other hazardous environmental material, including waste and sewage. Participants identified water contamination as a danger both to humans and livestock: “One thing that has repeated itself was of livestock dying as a consequence of water pollution (P5)”. Participant 8 provided another example:

There was seepage of that water into a stream and then I don't know, the stream went into the [grazing area]... The cattle — it's about 16, if I recall — died. It has happened even in recent years. [name of company intentionally omitted] did not dispute it when we were complaining to the DMR [Department of Mineral Resources]... They [the herders] said they have [been] compensated.

Exposure to hazardous particulate matter from the mining industry (i.e., heavy metal and chemical contaminants), was also perceived as an ecological threat. This is reflected in Participant 3's statement:

When there's that outlet of emission of operation, it condemns anything. It condemns you in your health, physically... There's these heaps of waste. When you can go outside, there's a slag heap. That slag heap is a waste of the matter when it comes from the furnace.

Confirming or disconfirming contamination in the area was beyond this study's scope. Nevertheless, it is evident that participants experience psychological distress owing to fears of perceived exposure to contaminants.

Environmental health-related distress

Environmental health-related distress was reported by eight participants who perceived the extractive industry and its potential harms (water scarcity and environmental pollution) or contaminants as intrusive or harmful. This being said, the injustices that have been experienced were described as having been “painful for everyone,” according to Participant G2.

Additionally, the distress associated with land conversions was insidious and persistent, participants explained. For Participant 7, it interfered with sleep and prompted existential thought content: “It bothers me so much, especially when I go to bed, [and] it makes me wonder why the world is like this.” Similarly, Participant 3 added: “We feel very worried and all. There's a little bit disturbance in my mind”. Participants were concerned Participant (G1) described:

People die from lung diseases. They will just tell you it's natural causes, which we know that it's not — it's inhalation of this dust and all these things. Most of our people die because they worked long years at the mines.

Discussing emissions from industry, another participant reported: “People are inhaling this acid. [It’s] damaging the ecosystem (G3)”. Participant 2 attributed her experience with respiratory disease to “pollution” and a lack of “fresh air” owing to the “smelter with its chemicals.” Even after recovering, she viewed the continued perceived threat to her health as “very stressful.”

Participant 3 attributed the cause of his psychological distress more directly, stating: “They’re contaminating us”. Thus, ecological changes were considered to be responsible for health outcomes in Rustenburg. As Participant G2 stated: “The mines are full every day, their hospitals are full. People are dying from the mines.” Additionally, during the interview Participant 9 described the psychological distress arising from living above a mine and feeling the ground shake as a perceived result of operational underground blasting to extend shafts:

Participant 9: When there’s rain, you can hear like a train underneath the house

Interviewer: You can hear it underneath?

Participant 9: The whole house vibrates.

Interviewer: How do you feel when that happens?

Participant 9: I feel so worried and it’s so risky staying in a place like this...I am certain that I am not the only one who is experiencing the sound.

The findings described above are consistent with studies in mine-affected communities exposed to toxic contamination that have described similar experiences of intrusiveness and exposure-related distress (Brown & Mikkelsen, 1997; Edelstein, 2018a; Vyner, 1988).

4.3 Theme 3: Grassroots community organising for land and environmental justice

Each subtheme in this study’s third theme, *grassroots community organising for land and environmental justice*, describes injustices in Rustenburg and how grassroots community organising groups resist these injustices, while imagining and creating new realities for themselves. Community groups’ tactics appear to address procedural and participatory environmental injustices and, in so doing, attempt to reduce slow violence, but also ensure the appropriate distribution of goods through land and distributional justice for community wellbeing (Shlosberg, 2009; Speer & Hughey, 1995).

Contextual emergence of Bua Mining Communities

BuaMC grassroots community organising group emerged in response to forms of injustice associated with the mining industry in Rustenburg that will be described in this subtheme. Participants perceived that extractive authorities held significant legal, influential, coercive and financial powers over communities, while community members did not benefit from mining, highlighting the need for community organising. Literature confirms these tactics as attempts to reinforce the prevailing social system by controlling those who hold influential community and labour power

(Burgis, 2015; Christens, 2019; Coulthard, 2014; Munslow, & Pycroft, 1988). In Rustenburg, Participant 5 explained: “People who are elected to represent the community you know, they are just not doing what’s expected of them. They are on the mines’ side.” All participants expressed some sense of powerlessness, hopelessness or helplessness. “Powerless, we are powerless,” Participant 1 reported. A sense of powerlessness over environmental injustices can be connected to experiences of marginalisation and psychological distress (Albrecht, 2005; 2019; Brown & Mikkelsen, 1997; Edelstein, 2018a; Nixon, 2011; Vynner, 1988). For instance, Participant 5 said: “Wherever you go you know it's about you, you are neglected”. Four participants explained that their relationship to oppression had changed: “I no longer worry, it’s anger now” (P4).

Although slow violence is ever-present in Rustenburg, direct violence has drawn attention to the need for community solidarity and empowerment. Targeted violence and intimidation against people who have spoken out against the mines or local authorities was a concerning finding (n = 6), as described by Participant 5: “The government is taking a back seat. The mine is violent; the government is violent.” More than 34 people died in Rustenburg in 2012 after miners went on strike to demand better working conditions (Marinovich, 2017). The majority of those killed in what has become known as the Marikana massacre were striking miners shot by police. The tragedy is one of the most extreme expressions of state violence since the end of apartheid (Bond & Mottiar, 2013). Violence in Rustenburg takes on many forms and is embedded in structures of exploitation. Participant 7 explained: “No capitalist establishment would actually survive without exploitation — that's violence, you know exploitation is violence of its highest order.” BuaMC grassroots community organising groups was created in 2012 “after the Marikana massacre, to give a voice to mining-affected communities as well as support” (BuaMC, 2018, p. 6).

BuaMC has focussed its attention on empowering communities through what community psychology describes as dialogical processes whereby people are transformed by changing their reality (Kagan, et al. 2019). Resistance emerged to protect communities from harm, and can be influenced by the notion of empowering traditional systems and restoring place relations (Brown, 2007; Larsen, 2008; Woods, 2003). The organising group has adopted a ground-up approach that fosters dialogue and sees strength in diversity and plurality of views. This is important in a context where dialogue is often closed down within public processes by mining and government authorities. BuaMC members, who represent more than ten communities in Rustenburg, contest power by shaping public discourse at various local and national levels (Speer & Hughey, 1995). It also works with communities to create a reality that transcends the extractive industry, striving to achieve fair distribution, land justice and alternative livelihoods.

Land justice

The community is involved in a range of actions that appear to work towards re-establishing tenure, relationship with place and emancipation from the mine economy. For instance, Participant 4 explains: “land issues have always been there from our birth”. BuaMC works with other community-based associations, such as the Royal Bafokeng Land Buyers’ Association whose mission is to “struggle for the recognition of land rights for many communities within the Bafokeng ‘tribe,’” a struggle that the association says “goes back to the time when their ancestors were dispossessed of those rights by colonialism and apartheid” (Bafokeng Land Buyers’ Association, 2020). Thus, it is postulated that land justice may also address place severing through dialogical resurgence (a term used in this report to refer to the re-establishment of dialogue with place and ancestral connections). Participant G1 explained: “The most important thing that our community wants to achieve is [to get] their land back.” Land restitution was not only about reconnecting with

ancestral land, but it was envisioned as an opportunity to strengthen community capabilities to benefit from the land's economic potential (e.g., mining and agriculture). In this sense, reclaiming land rights is envisioned as create a more predictable environment that is within the members control, to support livelihoods, protect, re-establish and affirm ancestral relationships where they exist, improve health and community wellbeing, and to redistribute power through land restitution (for instance, through mineral rights). This vision also includes an alternative economy to that of mining, one premised mainly on small-scale farming. Members of BuaMC have discussed a "back to the basics strategy... Food and the use of land becomes very important for human beings' survival. It's important to take this issue of agriculture seriously. We need to create a culture of planting," Participant 7 explained. He also described the history of this land-based struggle:

The [Bafokeng] Land Buyers Association is a founding member [of BuaMC] and the land issues... the resolution [during the general assembly] on the alternative economy is highly interlinked to the land question. Nothing green can grow without being on the land (P7).

Participatory and procedural justice

Procedural injustices pertain to unfairness in decision-making processes, which may include instances in which communities are excluded from the approval processes for prospecting or mineral rights as well as development projects (Scholsberg, 2007). Extractive industries have multiple legal obligations that require extensive community participation, including the development and implementation of Social Labour Plans (SLP) or Environmental Management Plans (EMP). SLPs must outline how surrounding communities will benefit from mining and how companies will offset any negative impacts. Meanwhile, EMPs should describe how mines will prevent negative environmental impacts and rehabilitate natural resources following operations.

However, communities are historically neglected during these processes. Participant 5 explained that people have struggled to influence processes that directly impact them: "People experience difficulty. I mean even processes, the environmental impact assessments or you know the public participations thereof. How was it approved? There was no consultation." Lack of access to information about these plans is an example of procedural injustice. The Promotion of Access to Information Act 2 of 2000 (PAIA) assists anyone in South Africa to access state-held information. However, this right to access information is not always implemented, as Participant 3 explains:

I feel very bad just because when you look at the PAIA...it gives us that power that we can go to the...state entity [or] authority [and] say: 'Okay, we want to know about our environment.' According to the Act, we are supposed to get an annual environmental report...but we don't have access to information and their operation...there's no transparency.

The first way that BuaMC members reclaim their rights is through critical education for members and community structures about the extractive industry and the rights of mining-affected communities. BuaMC also engages decision-makers, such as government, mines, traditional authorities and unions, directly in dialogue to raise awareness about the importance of community participation, for instance. Participant 4 from a traditional council explains: "It opens other people's mind[s] and it enlightens them. It will help the people to think of what happened in the past, which actually raises their emotions. It is there to a person to remind him of the past because it is revealing

that wound that was closed” (P4). The building of critical consciousness about practical issues empowers members during consultations with mines as they can assert their rights. In doing so, communities are able to shift the balance of power in these discourses and also bring public attention to their needs. Additionally, BuaMC monitors national policies that may affect communities. When policies are released for public comment, BuaMC holds workshops with members to discuss policy proposals and collates their inputs into submissions on proposed legislation.

BuaMC has also forged alliances with health experts, public interest law bodies and human rights organisations to strengthen their work. For example, BuaMC organised training on the PAIA for its members through the governmental oversight body, the South African Human Rights Commission. Thus, BuaMC opens critical dialogical spaces on issues that would otherwise be closed for its members or where members did not have adequate knowledge about the processes to reassert their rights. In building of critical membership and alliances, communities are also able to create a base of power that is hard to ignore.

Environmental enforcement, compliance and corrective justice

Poor enforcement of environmental regulations remains a concern in South Africa (South African Human Rights Commission, 2016) and this includes state failures to monitor the implementation of SLPs or EMPs, as well as waste disposal and pollution by-laws (Centre for Applied Legal Studies, 2017). A focus group participant (G3) alleged that mines also fail to comply with other legislation, such as the National Environmental Management Act. Participant G3 elucidated further:

The Mineral Petroleum Resources Development Act, it was not followed... That’s one thing that we need to actually emphasise when we talk about this pollution. By law, there is this environmental impact assessment... they need to come back with a report to tell us [the community] how harmful will the environment be [because of] pollution by the mine and how is it going to affect the communities living in that area.

Participant 5 explained his frustrations: “They [the government] don’t monitor the social and labour plans’ performance, or come with control measures or correction measures.” This lack of regulatory enforcement and compliance means that communities do not benefit from mining (i.e. in regard to the distribution of resources) and may experience direct harms (i.e. destruction of ancestral graves, environmental pollution and psychological distress).

BuaMC uses different forms of knowledge to bring community challenges into focus and reclaim communities’ rights to a healthy environment, free from harms. Participant 1 explained, “BuaMC has also done a lot for the communities to have knowledge — to understand what they need to benefit from the mines and how to raise their voices”. For instance, community-led monitoring has taken place to document perceived mining-related damage to homes and other property. Following from this, traditional authorities have lobbied the mining company to inspect houses allegedly damaged by blasting in the mine shafts or the death of cattle owing to suspected contamination. Members of BuaMC are part of these traditional councils. Groups such as BuaMC have also used multiple other accountability strategies to advocate for the right to a healthy and safe environment. For example, BuaMC undertook community monitoring of local public health facilities, documenting people’s health concerns and the perceived quality of care. The survey’s findings were used to advocate at the local government level around environmental health concerns

(Bua Mining Communities, 2017). The aim of this is to improve processes, increase participation and bring attention to community struggles.

By working with communities to reshape local discourses around mining and striving to shift where power lies, the grassroots organisation can be said to be working to regain dialogical space to address place severing and environmental-health related distress associated with environmental injustices. Similar larger efforts are also taking place at national and even regional level. For instance, mine-affected communities and accompanists across Southern Africa meet annually at the Alternative Mining Indaba, a gathering held to coincide with and counter the extractive industry's corporate gathering, the African Mining Indaba held in Cape Town, South Africa. Alternative Mining Indaba attendees discuss key communities challenges and how to address them. In the spirit of dialogue, mine executives will also be invited into these spaces to listen to communities' challenges and discuss solutions.

Distributive justice

Financial dependency on mines in the absence of other economic opportunities can make it more difficult for communities to reclaim their rights owing to fears of financial repercussions. However, concerns over the distribution of goods is a priority for communities in Rustenburg (as also seen in the theme 2, subtheme *water and climate injustices*). A senior community member described the dilemma:

Our environment has already been damaged by mining, there's this rate of unemployment in our area where the youth and the young adults are not working...The youth they want to benefit from the mine. We cannot chase away the operation. You chase away the operation — it's going to mean huge unemployment...Rustenburg is a platinum province. All the job creation is created by the mine operation (G3).

Despite the local municipality's mineral wealth, all participants reported socioeconomic struggles and perceived that they did not benefit from the mines in terms of public services. For instance, Participant 3 stated: "There is poor service delivery." Participant 9 added: "I am not happy about the mine because I am poor now." While BuaMC will engage in the dialogical process, the community, more broadly, has also resorted to more direct protest action. Although most of these demonstrations are non-violent, there have been occasions where communities have destroyed municipal and mine-related property. This may be viewed as what Gaventa (1982) describes as the punishment of targets who do not address issues and are perceived by communities to be complicit in the non-recognition of the legitimacy of the community and their needs. These actions are aimed at achieving distributive justice where mineral wealth is directed to communities to improve their current conditions.

5. Discussion and conclusion

The case study has explored and described mine-affected community members' psychological reactions as well as community responses to land and environmental injustices in Rustenburg, North West province, South Africa. The findings suggest land and environmental injustices give

rise to a form of slow violence in Rustenburg and that ongoing injustices contribute to experiences of place severing and environmental health-related distress.

One of the study's main findings was the psychological experience of place severing in reaction to historical land injustices. The concept of solastalgia was considered owing to similarities in solastalgia literature and the experiences described, such as unwanted changes to place, powerlessness and identity distress. However, there were important differences in experience that are inconsistent with existing literature on solastalgia. Firstly, Albrecht (2005, p. 44) speaks of direct experience — “lived experience” — and “immediacy of the threat”. This temporal orientation on the present may obscure intergenerational processes, such as complex historical land and environmental injustices that were emphasised by community members interviewed. Additionally, psychological distress expressed by participants and related to traditional culture and ancestral connections is not described in “non-indigenous solastalgia” (Albrecht, 2007 p. 49). Participants explained that disruptions to ancestral land disturbed their relationships with ancestors and also contributed to the loss of intergenerational knowledge, marking significant identity threats. Interestingly, Schlosberg & Carruthers (2010) recognised the importance of ancestral land to capabilities theory in relation to indigenous environmental justice struggles. They explain that threats to land may restrict the community's ability to function fully, thereby, also recognising the importance of the interconnectedness of land and cultural practices and beliefs in community wellbeing. Therefore, authors in this study are cautious to categorise this distress as solastalgia. The word “severing” has been used by indigenous scholars and non-psychological research to describe cultural disconnection broadly and forms of intergenerational trauma (Chalmers, 2017; Ellis & Perry, 2020; Estes, 2019). However, we posit that the term “place severing” that has been used by authors here may contribute an additional specificity as well as visibility to the role of land injustice in trauma. A scoping review by Galway et al. (2019) affirms these findings by describing that settler-colonial experiences of place-related distress may be different to the experiences of indigenous peoples and, therefore, solastalgia may be inappropriate descriptor of instances we propose are better described by a preliminary term such as place severing. We argue that this term should be thought of as preliminary to avoid imposing this term on communities without consultation.

The exploratory methodology only provided an overview of these experiences and was not sufficient to describe intergenerational trauma in detail. Future research should fill this gap, by focusing on generational and intergenerational components of place severing and, specifically, disturbances to cultural and ancestral connections, while keeping the term rooted in experiences of land, climate and environmental injustices. Additionally, psychology tools for assessing place-based distress in relationship to the experience of injustices in non-western settings are needed. Green (2020) explains that the extractive industry is able to continue perpetuating environmental injustices through their contestation of evidence and arguments. Measures such as the Environmental Distress Scale could be considered for adaptation or new measures generated to assist in creating a body of evidence (Higginbotham, et al. 2006). Furthermore, none of the participants interviewed were affiliated with the mining industry and future studies could consider including this population. Considering that this small case study was exploratory and only used indirect means of assessment, it is likely that the results only represent a small fraction of the overall psychological reactions of communities.

Similarly, our findings regarding environmental health-related distress and experiences of powerlessness echo those unearthed in Edelstein's (2018a) studies of toxic contamination that identify health uncertainty, loss of social trust, health pessimism and a loss of control. Identifying the direct causality of most generalised psychology distress is unfathomable (Johnstone, & Boyle, 2018) and

it is likely that some of the generalised psychological distress expressed was exacerbated, or even triggered, by other biopsychosocial factors. However, the sense of intrusiveness and health-related distress experienced in Rustenburg was pronounced. Environmental health-related distress was not only to fear of contamination, but also other forms of physical intrusions, for instance, embodied by cracks in the home that were said to relate to mine blasting. Therefore, experiences of proximity to the mines and environmental health-related distress could be a future area of exploration.

But our work also re-iterated the role of grassroots organising groups to counter slow violence and to re-establish a dialogical relationship to place by mobilising, critical education, building alliances and empowering communities in discursive spaces where power play out. Furthermore, land justice, as a process of re-establishing a relationship to ancestral land, would also appear to be directed at addressing experiences such as place severing and future community psychology research should explore how land restitution could assist in restoring a sense a wellbeing.

This struggle is based within a context where serious concerns exist about the application of environmental law and policy in South Africa, particularly as it relates to procedural justice, as well as regulatory enforcement and compliance that are dominantly concerned about the distribution of goods and the prevention of harm (Centre for Applied Legal Studies, 2017; South African Human Rights Commission, 2016). These lapses in environmental regulation and policy also highlighted important practical questions for the field of community psychology both in its role in communities and possibly in the legal system.

Brown (2017) has expressed that community advocacy movements are engaged in political contestations about health and causes of distress. Brown (2017) argues that healthcare workers could better support communities in these health struggles. Furthermore, Barnes (2018, p. 417), in studying child lead poisoning, concludes that there is a need for “psychological researchers to get involved in environmental/social justice initiatives”. We concur with these authors and support their arguments. In this study, exploring and explicitly naming the specific injustice in relation to participants’ psychological reactions and community resistance, has suggested opportunities for community psychology. If land is not only central to distress, but also at the core of community identity, wellbeing and struggle, then community psychologists should explore ways of accompanying communities who seek land and environmental justice. Community psycho-social assessments that illuminate psychological reactions specifically to injustices, as has been done in this case study, are a possible avenue for this kind of accompaniment. Other forms of psycho-social assessments have been used to highlight the potential impacts of mining, as in the matter of Global Environmental Trust, Mfolozi Community Environmental Justice Organization and Sabelo Dumisani Dladla vs. Tendele Coal Mining, et. al. (Edelstein, 2018b). Additionally, psycho-social assessments have been applied to communities exposed to toxic contamination from human-induced environmental disasters in the United States (Edelstein, 2018a; Erikson, 1996). To the best of our knowledge, community psychological research and formal psychosocial assessments have not been applied to land restitution cases where environmental injustices intersect with experiences of place severing and environmental health-related distress.

Relatedly, the rights of nature, also known as Earth jurisprudence, is increasingly being applied as an alternative to traditional, and mostly anthropocentric, environmental laws that have not adequately protected communities or their ecologies from being harmed (Burdon, 2011; Cullinan, 2011, Green, 2020; Shiva, 2020). Watkins (2019) has highlighted a potential for psychologists in what she refers to as earth accompaniment. The integration of place attachment theories to community psychology may therefore contribute to studies and assessments that add to the broader legal argument for the strengthening of existing law and the exploration of new applications, such

as Earth jurisprudence. Essentially, the rights of nature may ensure that not only the voice of communities are heard, but also the voice of the land, water, soil and air in decision making. These future directions also counter a growing trend in psychology that individualises and medicalises ecological- and climate-related distress (Barnwell, et al., 2020). In Canada, for instance, psycho-social practitioners have been said to individualise trauma rather than supporting emancipatory processes, thereby de-politicising complex ongoing land injustices (Million, 2013). Thus, drawing attention to distress that is rooted in slow violence and injustices not only avoids misattributing psychological distress and being complicit in extractive contexts, but suggests opportunities for community psychologists to accompany these struggles.

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Author contributions

The first author led the data collection, conducted the analysis and finalised the draft and final submission. The co-authors provided supervision and editorial support.

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Competing Interests

The authors declare that no competing interests exist.
