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South African managers self-regulating their after-hours smartphone usage: a revised perspective of work-family border theory

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ABSTRACT

In a prior quantitative study, we found that South African managers could be categorised into three different border-keeper groups to integrate or segment their work and home domains when receiving after-hours communications through their smartphone from work. In this study we investigated how these three groups of border-expanders, border-adapters, and border-enforcers regulated their after-hours smartphone usage for work purposes in the home environment. We employed a reflexive thematic analysis of 27 in-depth interviews (20 smartphone users and 7 of their partners). This work updates Clark's *Work-Family border theory* to include border concepts in the context of smartphone technology. The border-keeper groups were found to differ in how they used the physical, psychological, and temporal planes to integrate and/or segment their work and home domains. Moreover, this was also attributed to the way in which each group determines the importance and/or urgency of each communication and therefore the development of self-regulatory patterns in how they operationalise the facilitation of after-hours work communications.

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Work-family conflict; self-regulation; after-hours work; remote work; qualitative methods

1. Introduction

Information and communication technologies (ICT), such as smartphones, provide a ubiquitous connection between workers and employers (Cecchinato & Cox, 2020; Cox et al., 2013; Mazmanian et al., 2006). However, they alter when and where work starts and ends, blurring distinctions between work-time and rest-time (van Zoonen et al., 2020). Employees must then rely on industry-based norms to determine when they are expected to remain available and connected to work after-hours (Derks et al., 2014; Gadeyne et al., 2018). In extreme cases, employees may make themselves available 24/7 (Cecchinato et al., 2014; Jarvenpaa et al., 2005; Lutz et al., 2020; Mazmanian & Erickson, 2014;

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Richardson & Thompson, 2012). Employee work hours could be stretched even further by global teams working together across multiple time zones (The Economist Intelligence Unit Limited, 2020). It has also been shown that the behaviour of employees engaged in extended hours of work can be countered by people around the employees, such as an employer or family member, who help them to determine when to work and when to rest (Cecchinato & Cox, 2020).

1.1. Work-family conflict

Work-family conflict is defined as ‘a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible so that participation in one role [home] is made more difficult by participation in another role [work]’ (Greenhaus & Beutell, 1985; Kahn et al., 1964; Kossek, Pichler, et al., 2011; Van Hooff et al., 2006). However, the flow of conflict is bidirectional, as work can unduly influence home and vice versa (Kinnunen et al., 2010). The relationship between home and work is therefore complex and multidimensional, even without smartphones. Due to the complexities in unpacking these bidirectional relationships, this study focuses on the work-home/family conflicts; although it is acknowledged that home/family-work conflicts and balance are also possible avenues for future research.

Individuals report greater wellbeing and health benefits when provided with recovery time (in a non-work domain) after a hard day’s labour as this has enabled them to impede spill-over from work (Brown et al., 2009; Geurts et al., 2005; Hobfoll, 1989; Sanz-Vergel et al., 2011). Without the provisions of recovery time, job demands accumulate (e.g. through working overtime) resulting in potential psychological damage and health problems (Demerouti et al., 2005; Demerouti & Geurts, 2004; Eby et al., 2010; Geurts et al., 2005; Glezer & Wolcott, 1999; Majomi et al., 2003; Montgomery et al., 2005; Peeters et al., 2005; Van Hooff et al., 2006). The higher the strain of the job (high job demands, low job resources) the greater the potential for a negative interaction and increased spill-over between the domains (Demerouti et al., 2005; Demerouti & Geurts, 2004). However, not all spill-over is negative (e.g. being rewarded or acknowledged at work) and those who identify as dual-centric employees (i.e. employees who value work and non-work equally) are found to have ‘more overall satisfaction, greater work-life balance, and less emotional exhaustion’ than work-centric peers who, predictably, have the lowest personal life satisfaction (Bourne et al., 2009, p. 387).

One of the most prevalent forms of work-family conflict occurs when work-related stress and psychological strain spills into the home. As a result, individuals become less likely to recover from a day’s work (Lacovara, 2007; Peeters et al., 2005). The provision of recovery in relation to the effort needed to perform a task, is a central tenet of the Effort-Recovery Theory. Without this ability, the individual will become susceptible to strain and/or short-term psychosomatic health complaints or will have a negative response to workload demands (Geurts et al., 2005, p. 321). Similarly, a worker who functions in a work environment which does not provide them with the ability to regulate their working hour demands, results in ‘negative load reactions’ (e.g. strain) which overflow into the home domain (Geurts et al., 2005, p. 321). Thus, through successive exposure to work after hours and limited recovery opportunities, the worker becomes additionally strained which diminishes their performance because their work

environment was activated without adequate time to recuperate from the previous exposure (Geurts et al., 2005). If not properly counterbalanced through the provision of recovery time, the demands can build up and result in potential psychological damage and health problems (Demerouti et al., 2005; Demerouti & Geurts, 2004; Eby et al., 2010; Geurts et al., 2005; Glezer & Wolcott, 1999; Majomi et al., 2003; Montgomery et al., 2005; Peeters et al., 2005; Rost & Mostert, 2007; Van Hooff et al., 2006). The expectation for employees to regularly read and respond to electronic communication, often all through the day, exacerbates these spill-over effects. Technologies, such as smartphones, can therefore be thought to alter the way in which individuals structure their lives.

1.2. Work-family border theory

To better understand these complexities, this study expands on Clark's (2000) Work-family border theory. Work-family border theory explains how individuals manage, negotiate, and control their movements between the work and home domains in order to maintain a sense of balance (Clark, 2000). 'Borders' determine where domains start or end. 'Borders' can operate on physical, psychological, or temporal planes to cue the individual on how to integrate or segment the domains (Clark, 2000; Demerouti & Geurts, 2004; Nippert-Eng, 1996). The physical plane includes physical elements, such as buildings, desks, and doors, which cue the individual on what they should be doing and when they should be doing it (Clark, 2000; Mellner et al., 2015; White & Thatcher, 2015). The psychological plane connects the individual's thoughts to a location and thus can be prompted by physical elements or time elements around them (Clark, 2000; Mellner et al., 2015; White & Thatcher, 2015). The temporal plane utilises time as an indicator of when one domain starts and another ends (Clark, 2000; Mellner et al., 2015; White & Thatcher, 2015). Domain separation relies on the border strength. A hardened/strengthened border enables borders to remain separated. Border-crossing describes the behaviour of the individual when activities intended from one domain are practiced in another domain.

To enable recovery, by ensuring that work activities are mostly carried out in the work domain, external border-keepers can assist in emphasising the border between each domain and thus strengthening the border between the domains (Clark, 2000). Examples of external border-keepers include supervisors who indicate to their employees that receiving frequent calls from home is unacceptable or a partner who indicates their displeasure at responses to work communication at home (Clark, 2000). Border theory proposes that a border-keeper should help manage the border-crossing process between the work and home domains to counterbalance any negative effects. Without the ability to manage 'border-crossing', the accumulation of work demands and the push to facilitate after hours work more frequently results in the steady flow of negative effects into the home environment. However, border-keepers have their own biases and use their own personal experiences in the construction, development, and implementation of the borders between 'work' and 'home' domains (Clark, 2000; Kreiner et al., 2009). To resolve these differences, it has been advised that border-crossers communicate the demands placed on them to external border-keepers, who could then support greater domain flexibility (Anderson et al., 2002; Clark, 2000; Leung & Zhang, 2017). These mechanisms are illustrated in [Figure 1](#).

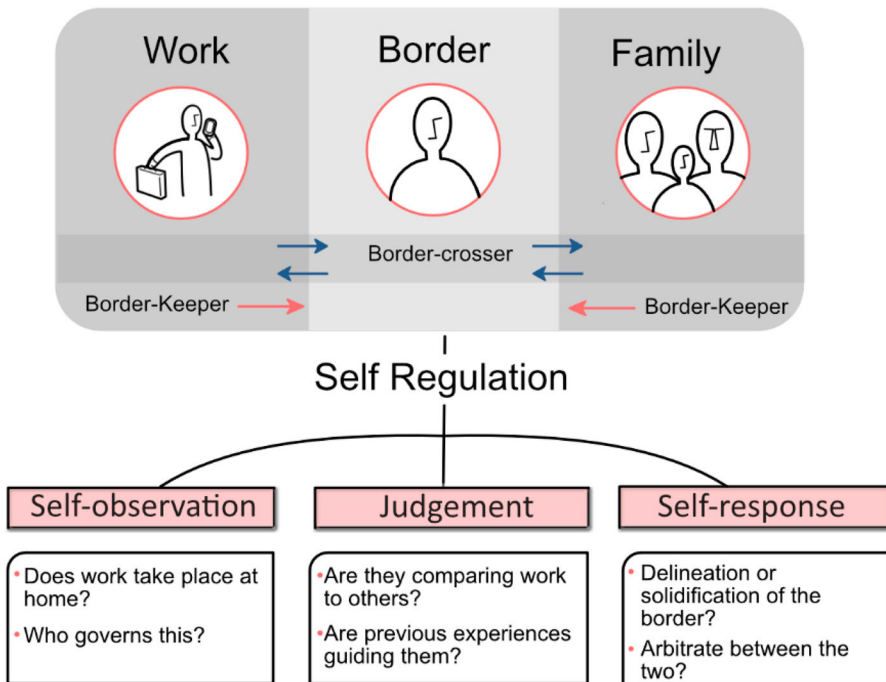


Figure 1. Reconceptualised work-family border theory by Clark (2000, p. 754).

1.3. Self-regulation and border theory

In addition to external border-keepers, this study also explores the process of an individual acting as their own border-keeper. For an individual, the process of border and domain segmentation mirrors the internal reflective process found within self-regulation theory. According to social cognitive theory, when individuals employ self-regulation, they observe their own behaviours and compare these behaviours either to a self-set standard or one developed by comparison to a reference group, to which they judge the appropriateness of their response/s (Bandura, 1989; Eastin et al., 2006; LaRose & Eastin, 2004). The individual will then reward themselves if they meet internal goals or punish themselves if they fail. Over time the behaviour becomes the individual's own internalised self-regulatory behaviour (Bandura, 1989; Boeree, 2006). Self-observation occurs when an individual reflects on their usage or behaviour (Bandura, 1989; Boeree, 2006). For example, this might occur when an employee reflects on their smartphone usage for work while at home. Judgement occurs when a person compares their own behaviour or usage to others to determine the 'standard' (Bandura, 1989; Boeree, 2006). For example, an employee might compare their own behaviour of dealing with work-related calls on the weekend to their line manager or colleagues to establish this as the 'standard' behaviour. Finally, a self-response takes place when the individual compares their 'perceived' behaviours against the standard set of behaviours to establish a positive or negative self-response (Bandura, 1989; Boeree, 2006). They reward themselves for good performance or punish themselves for doing poorly in relation to the standard (Bandura, 1989; Boeree, 2006). For example, when facilitating a smartphone call on a weekend, the

individual might reward themselves by feeling good if this matches what other people (their supervisor or colleagues) are also doing.

Figure 1, represents the self-regulation mechanism in Clark's (2000) work-family border theory in a similar manner to Steffensen et al. (2021) who conceptualised self-regulation as a personal trait of the border-crosser. Steffensen et al. (2021) found that those with low self-regulation more readily facilitated work emails throughout the day, increasing spill-over and work-family conflict (Steffensen et al., 2021). In contrast, those with high self-regulation experienced less work-family conflict (Steffensen et al., 2021).

1.4. Border theory and smartphones

When Clark (2000) first published work-family border theory smartphones had a limited penetration rate, fairly rudimentary electronic communication functionality, and were relatively expensive compared to more recent smartphones (Borhanuddin & Iqbal, 2016). This was compounded by poor mobile connectivity, slow speeds, and costly internet and data (Datta et al., 2003; Hodge, 2005). In the last decade this has significantly changed with costs coming down, internet connectivity increasing, and functionality growing exponentially, therefore linking multiple forms of communication into a single handheld device.

Border-keepers can help manage the border-crossing processes of their spouse, partner, or co-workers across the domains to counterbalance negative spill-over effects (Clark, 2000). Clark (2000) posits that without the ability to manage 'border-crossing', work demands accumulate, resulting in negative effects felt in the home. This reduces recovery time and increases the risk of developing health issues. Recent technological developments have allowed work to take place more frequently at home due to smartphones and related technologies (Derks et al., 2015). However, since smartphones provide a mechanism for work to take place at home, this might diminish the worker's recovery time and their life satisfaction (Cecchinato & Cox, 2020; Derks et al., 2016; Jarvenpaa et al., 2005; Mazmanian & Erickson, 2014; Richardson & Thompson, 2012). Individuals might struggle to balance work and non-work demands which can result in conflict in one or both domains. Gadeyne et al. (2018) emphasised the need to consider contextual factors in our understanding of how technology-mediated work impacts on family life. In this study we consider South African managers' use of smartphones as the context.

1.5. Managers

A large proportion of the research on work-family conflict either uses general employees or a mix of general employees and managers as the primary sample (Cho et al., 2020; Derks et al., 2015; Gadeyne et al., 2018; Leppäkumpu & Sivunen, 2021; Park et al., 2020; Richardson & Thompson, 2012; Steffensen et al., 2021; van Zoonen et al., 2020). Despite the fact that many managers experience more autonomy and decision latitude over their work schedules than their subordinate workers (Kossek & Lautsch, 2012), studies that focus on managers frequently find that managers experience greater work-family conflict (Boswell & Olson-Buchanan, 2007; Derks et al., 2016; Mazmanian et al., 2013; Moore, 2000; Storch & Juarez-Paz, 2022). This may be

due to greater work responsibilities, longer working hours, competition between managers, handling larger quantities of communications, and the time-sensitive nature of many their decisions. Mazmanian et al. (2013) found that with mobile devices the autonomy and decision latitude of the managers was overridden by expectations of always being available. Of course, this would also be dependent on the manager's family situation. Derks et al. (2016) found that managers with children under the age of 12 or those working more than 40 h in a work week experienced increased work interference in the home. The demands by organisations and staff to either merge or delineate work and home after hours with or without smartphones is strongly felt by managers. Thus, managers are central to having a better understanding of how work flows into the home and what role they play in the facilitation or rejection thereof. This study aims to unpack the managers' role in this process.

1.6. South African context

While Clark's (2000) theory was developed before the widespread adoption of smartphones, it is easy to see how the capabilities of smartphones might blur the border between work and home. In South Africa in 2010, 73.4% men and 82.2% women indicated that they had never used a smartphone (Hooper et al., 2010). This had changed radically by 2019, with the official penetration rate of smartphones reaching 91.2% (Independent Communications Authority of South Africa, 2020), easily the highest smartphone penetration rate in Africa. At the time of data collection in 2016, the official smartphone penetration rate was only 43.5% although the mobile phone penetration rate was close to 100% (Independent Communications Authority of South Africa, 2020). No verified and published statistics exist describing who owned smartphones in South Africa in 2016, but given the relatively high cost of smartphones (compared to mobile phones) at the time, it is likely that smartphones were more accessible to those earning higher salaries. At the time data were collected in 2016 the official unemployment rate was 27.1% (Statistics South Africa, 2016) with 8.5% of employed people being identified as managers.

In previous work in South Africa, three border-crossing groups (border-expanders, border-adapters, and border-enforcers) were described by White and Thatcher (2015) based on the quantitative component of a mixed-methods PhD study (White, 2018). The three border-keeping groups were identified using cluster analysis from the number of communications and the amount of time spent on various after-hours communications on their smartphone, their responses to a work-family conflict scale, their responses to a satisfaction with work life scale, and their responses to a satisfaction with home life scale. Border-expanders were users who lacked the ability to delineate the home-work border, frequently allowing after-hours communications to spill over into the home domain and not keeping the domains separate. Border-adapters, actively arbitrated all smartphone communications originating from work. They permitted border and domain flexibility for certain communications which related to the communicator's identity and role (i.e. the higher the authority of the communication initiator and the higher the perceived importance of the communication, the more likely they were to answer). Border-enforcers emphasised a clear domain delineation and border solidification. They emphasised that there was a time and place for each domain and enforced

the distinction between the two. These results were similar to Derks et al. (2016) who described a group of 'integrators' (those managers who allowed the home and work domains to merge and subsequently saw a reduction in work-family conflict) and 'segmenters' (those managers who established rigid borders between work and home). While the quantitative results provided key insights into grouping how managers self-regulated their smartphone usage after hours for work, White and Thatcher (2015) only briefly described these border-keeper groups. This study provides greater detail and insight into these behaviours and characteristics of each group and how they border-keep or self-regulate the border in the smartphone era.

2. Aims and research questions

This study provides a deeper, richer understanding of the mechanisms in the development of border and domain structures of the three border-crosser groups in the context of smartphone usage, using border theory and self-regulation as the theoretical background. Based on the questions arising from the quantitative component of the mixed-methods study, the following research questions are explored:

- How do the border-keeper groups define their home and work domains in terms of the three planes (physical, psychological, and temporal planes)?
- How do the border-keeper groups determine border-crossing between their work and home domains?
- How do the border-keeper groups self-regulate their after-hours communication to influence the border construction?
- What other mechanisms do the border-keeper groups re-establish control over domains and the border?

3. Methods

3.1. Participants

This study focused on middle to upper management in medium to large South African organisations. All informants were required to have a smartphone for work which they used for calls, emails, text messages and internet browsing. The interview participants were volunteers from an earlier quantitative survey who indicated their willingness to be interviewed. The earlier survey participants (N = 180) completed a survey which was available from October 2012 to July 2013. The survey sample was recruited utilising a combination of snowball sampling on social media (Facebook, Twitter, and email) and an email database of donors to a charitable organisation. In total, 27 participants, 20 primary and 7 secondary participants (see Table 1), volunteered and were interviewed from the June to August 2016. Primary participants were contacted by phone, based on their willingness to continue participating. Primary participants were asked if their partners would be willing to be interviewed. Ten participants indicated that their partners would be willing and seven of these secondary participants indicated willingness when contacted by phone. Participants selected an interview date, time, and location which suited them best to reduce the chances of additional burdens from participating. To obtain a holistic account of the

Table 1. Profiles of primary and secondary participants.

Primary participant*	Gender	Age	Work field	Occupation	Partnership type	Children	Secondary participant*	Gender	Age
Border-expanders									
Alex	M	35	Airline	Captain	Married	Yes, 1	Alice	F	31
Adam	M	34	Recruitment	Managing director	Domestic partnership	None	Anton	M	36
Albert	M	30	Insurance	Senior manager	Married	None	Anna	F	29
Andrew	M	29	Broker & financial investment	Managing director	Domestic partnership	None			
Alfred	M	37	Banking	Managing director	Married	Yes, 2			
Amy	F	33	Consulting	Management	Domestic partnership	None			
Arthur	M	38	Banking	Director Finance	Married	None			
Allan	M	33	Telecommunications	Management	Single	None			
Alister	M	32	Hospitality	Management	Single	None			
Border-adapters									
Daniel	M	40	Banking	Change manager	Domestic partnership	None	Damien	M	33
Derrick	M	32	Information Technology	Engineer	Domestic partnership	None	Demi	F	31
Diana	F	28	Education	Head of Year	Married	None			
David	M	30	Telecommunications	Analyst Programmer	Single	None			
Dean	M	38	Construction	Architect	Domestic partnership	None			
Declan	M	32	Recruitment	Analyst Programmer	Single	None			
Daniella	F	34	Sustainability	Environmental Scientist	Single	None			
Donald	M	31	Banking	Software developer	Married	None			
Border-enforcers									
Keith	M	37	Banking	Accounting manager	Married	None	Kimberly	F	37
Kevin	M	38	Telecommunications	Project manager	Married	None	Karen	F	37
Kai	M	37	Banking	Middle manager	Married	Yes, 2			

*These are not their real names as pseudonyms are used to ensure anonymity.

informants' smartphone usage, multi-source interview data were obtained from both participants and their partners (secondary participants) as advised by Kossek, Baltes, et al. (2011a) and employed by (Leppäkumpu & Sivunen, 2021).

3.2. Procedure

Ethics permission was obtained from the University of the Witwatersrand's Human Research Ethics Committee (reference: H120727). The interviews were on average 35 min in length, with the longest being 40 min and the shortest being 15 min (with one secondary participant). The length of the primary participants' interviews were time-constrained because they usually took place during work or work breaks, due to their responsibilities as middle to senior management employees. Similarly, the secondary participants' interviews mostly took place at their home, after-hours, where they were looking after children or preparing a meal for the family. The interviews were recorded using a Philips DVT7000 Meeting Recorder Dictaphone and an external 360-degree microphone. Interviews were transcribed by a professional third-party transcription service provider and checked by the first author to ensure accuracy and consistency between the audio file and the transcription.

The transcribed interviews were further anonymised by removing all identifying characteristics such as names, and specific events, and coded to ensure anonymity. ATLAS.ti 7.5.12 was used to define codes and identify themes from a reflexive thematic analysis (TA) perspective. All participants were requested to be as honest as possible in their responses and were informed that there were no right or wrong answers to the questions. The participants were not coerced into participation and did so of their own free will. Participants were informed at the start of the interview that they could withdraw from the study at any time.

3.3. Interview design and schedule

In order to address the research questions, five broad interview questions were developed: how participants defined the home domain, how they defined the work domain, how participants separated their work and home domains, mechanisms they used to decide on whether to communicate using their smartphone after-hours, and other mechanisms used by participants to re-establish control over the domains and the border. Additional probes sought to determine the ways in which participants used their smartphones for calls, emails, and text messages, e.g. suitable times during the workday and after work hours for the various communication types, the acceptance or rejection of communications, spouse's/partner's/children's responses, and defining their standard usage in a day and after-hours. The secondary participants' interview questions provided an interpretation of the same topics from a more neutral viewpoint; they offered a reflective environment and not an internalised response bias.

3.4. Analysis

This study utilises the six-phase analytical process proposed by Braun and Clark to identify the pertinent aspects of reflexive TA (Braun & Clarke, 2021; Byrne, 2021). Using an iterative

process, the first author initially immersed themselves within the data, familiarising himself with points of reflection, allowing them to deepen the knowledge and contextualisation of what was communicated, while also documenting his own thoughts and feelings as points of further reflection. The iterative process helped to more clearly identify codes (latent or semantic) which related to the research questions and led to the development of the essential themes. The whole data set was then coded for meaning and meaningfulness contextualised within the themes. This was achieved by reflecting upon the relationship between the codes and their relationships, resulting in the construction of a narrative within a theme which collectively answered the research questions. The relationships were further scrutinised to determine the link between the overall data, codes, and themes. The naming of each theme helped emphasise its uniqueness while elucidating its connection to the over-arching research questions. The study is concluded with an illustrative analysis detailing the contributions to the theoretical area while answering the research questions.

4. Findings

The findings describe how the border-keeper groups developed and constructed borders and domains. This section begins with the way in which an individual defines their 'home' domain and then moves onto how the 'work' domain is defined. Thereafter we look at how individuals separate their 'home' and 'work' domains and the role that time plays in the domain's construction. We then look at how individuals determine the importance and urgency of a communication, how self-regulation is used to determine the border, and finally we consider the origin of control. To help the reader better understand the development of each border-keeping groups a thematic map can be found in [Figure 2](#).

4.1. *I will build my home/work out of ...*

When participants (primary and secondary) were requested to define their work and home domain, their responses closely corresponded to physical, psychological, and temporal planes identified by Clark (2000). This study differs from Clark's as participants in this study were also found to use multiple planes together to construct a domain. This is represented here using the fairy tale of the 'three little pigs' (border-expander, border-adapter, and border-enforcer), and their use of different materials (themes and or planes) in the construction of their homes. Although the themes identified are unique, the relationship between them and their co-themes is dynamic, resulting in greater meaning and narration being lost if not reflected together (Braun et al., 2012; Byrne, 2021). The following section therefore details how border-expanders, border-adapters, and border-enforcers (i.e. 'three little pigs') defined their work and home domains – reconstructed across the three planes. It was originally thought that work and home differed, but work and home are not necessarily independent domains but, instead, interwoven. For example, wages earned in one domain pass onto the other or the frustrations we experience at work are reflected in our mood when we are at home. Thus, the relationship is highly interwoven (Kanter, 1989; Kossek et al., 2021) and the intersection between the domains is governed by various combinations of the three planes. These findings detail the mechanisms and characteristics of these managers as they aim to create personal and professional role-border management.

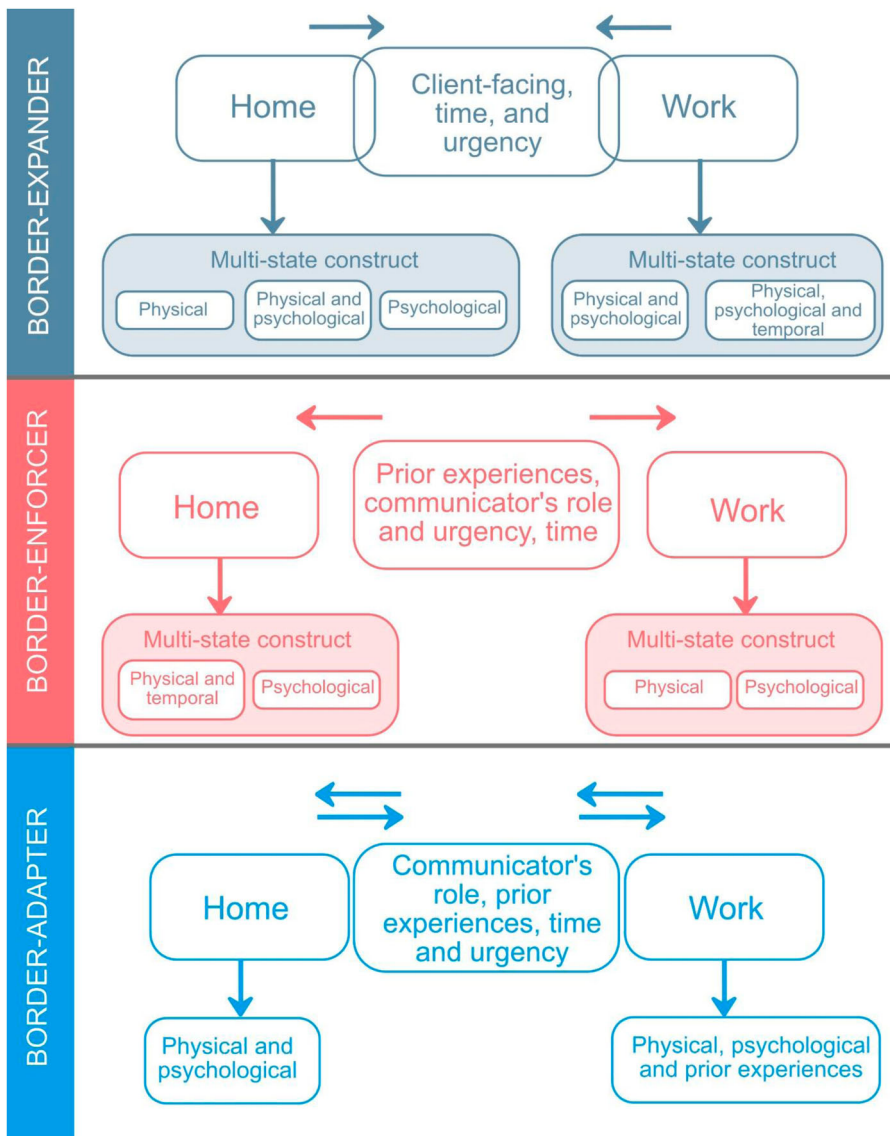


Figure 2. Thematic map to help describe each border-keeping groups approach.

4.2. This little piggy built their home/work of straw: border-expanders

Border-expanders and their partners created borders which were flexible and allowed for the freer movement between domains. Consequently, the domains were conceptualised, using a combination of planes. The usage of straw as an analogy encapsulates the approaches taken by border-expanders. Straw bends easily and is highly susceptible to the elements, allowing for work and home to become further enmeshed.

Border-expanders and their partners generally agreed that home was on the physical plane with Arthur even providing his physical address. The identification of the physical plane, when defining their home domain, should have resulted in a clear

border between work and home. However, this was not the case. Not all border-expanders defined their home domain as a physical domain construction. They utilised a psychological construction, or a combination of a multi-state construction using both physical and psychological planes. However, neither of these constructions were supported by their partners. This lack of support indicates that their domain construction may be more of an internal belief.

The use of a psychological construct, by border-expanders, does potentially explain the transient nature of their domains and borders. This allows them the flexibility to work anywhere and anytime as Allan says:

Home is where I relax ... I don't have to answer to anyone else and I can do whatever I want, when I want, how I want. [Allan]

However, because psychologically there is no firm start or end of the domain, explaining the porosity of the work-home border.

The persuasiveness to work ubiquitously is furthered by Alfred defining work as 'a place of inspiration', creating an emotive and abstract ideal, making containment complex and domain constriction unlikely. Albert described a multi-state construction using physical and psychological planes which resulted in the belief that work can occur anywhere and anytime. This entwinement can be seen in Albert's description where the work domain was almost indistinguishable from the home domain:

Well, work is – it's a place of I guess, where you go, the place of knowledge more specifically ... in my case, I lead a team of people, so it's kind of a different family, you know. So, you retreat from one place to almost the secondary home, and should always be treated as a secondary home, otherwise it'll consume everything else that is home. [Albert]

A multi-state of all three constructs (physical, psychological, and temporal), in contrast, was used by Adam to define his work domain:

it's a place where I interact with people a lot more, it's somewhere where I'm a lot more guided by things that need to be done, I have deliverables, I have commitments, obligations to things, people, situations that are driven either by me or by others that are either time sensitive, pressure sensitive, outcome-based where everything is measurable and quantifiable. [Adam]

Border-expanders therefore saw their work domain as a complex integrated space. At the same time, border-expanders (like Alex) sometimes contradicted themselves, thus emphasising the ambiguity of the two domains and demonstrating significant domain blurring:

Because I like to keep personal, personal, and work, work, and the problem is that work monitors usage especially the internet. They get itemised billing, of phone calls so if I use it, if I phone [partner] or friends they'll pick it up and if I use it to browse the Internet or BidorBuy they will pick it, so they get a trend monitoring. So work is basically a work e-mail address or a work phone, but it lives next to me the whole time. [Alex]

Initially they highlighted a clear separation of domains, but later mentioned their inseparability from their smartphone.

Border-expander partners therefore suggested that they were largely ineffective in solidifying and delineating a border. Anna, partner of Albert, describes how she had purposefully booked a vacation away in the South African bushveld to ensure work didn't encroach on family time:

We went on holiday with my family. And the whole point is there is no [smartphone] signal ... [Albert] would then sneak out while we were supposed to be having family time to the big rock [where he could get a signal] – only to have phone conversations with his staff. [Anna]

Border-expanders were more permissive than other groups in their facilitation of work domain infringements via their smartphone into their home domain. Over time, the border-expanders became so enthralled with the stickiness of the communication activity that they struggled to disengage themselves from their smartphones and constantly crossed the border between the two domains.

Border-expanders, supported by their partners, largely agreed that they were unable or reluctant to create a temporal border between the two domains. One explanation as to why this was the case could be attributed to the way in which they determined the urgency or importance of a work communication. A prime example of why they would respond to an after-hours communication is provided by Arthur, who indicated that 'I would still respond to something urgent' when questioned.

Border-expanders were found to be more susceptible to after-hours smartphone calls that were not necessarily important but were perceived as urgent. Border-expanders were driven to fulfil their employer's or client's requirements via their smartphones, which they validated because they were either client-facing or it was part of an accepted industry standard (and reinforced by their employers, organisations, or peers). Border-expanders viewed themselves as part of the organisational management structure and therefore needed to respond to communications to ensure that they remained on course for further career development. Arthur, mentioned that while they were away on holiday, they would still make themselves available:

My employer and my clients too ... expect I'm contactable 24 hours a day, given the nature of the work which typically requires a very quick turnaround in terms of response. [Arthur]

It is important to note that at the time of the interview, Arthur worked in a client-facing director role in a multinational financial services company, an industry well known for their extended work hours and high stress (Beaverstock, 2005). Some employers offer incentives to ensure this behaviour is adopted more readily. Albert, for example, was awarded bonuses or shares for meeting or exceeding performance targets at the end of their quarterly/yearly reviews. This behaviour appeared to stem from their career ambitions and was reinforced by their organisational demands. Their inability to discern between importance and urgency could be attributed to a combination of social learning and the inability to differentiate between self-actualised goals and the goals of the organisation.

4.3. This 'little piggy' made their home/work out of stone: border-enforcers

Border-enforcers employed a stone-like solidification of the domains to accentuate their physical locations and roles they adopt. The rigidity of border-enforcers therefore approximated the robustness and durability of rock, making it a good building tool to create a home. Unsurprisingly, border-enforcers and their partners utilised physical descriptions to accentuate their inflexibility when defining their home-work domains. 'Home is where I come home after work' was Keith's physical domain construction definition. Kevin, similarly, defined their home as: 'pretty

much my house and garage and the yard'. However, unlike border-expanders, the physical emphasis of the home domain assisted border-enforcers to delineate their home domain.

Kai defined his home using physical and temporal planes while still managing to emphasise clear borders 'from the time I leave the office ... and until the next morning when I get back ... week day starting at 08:00 to 17:00'. This indicates that border-enforcers managed to scaffold multiple planes together to enforce the border between their work and home domains. Moreover, the inclusion of the temporal (time) plane, allowed for a clearly quantifiable measure for when and where work should take place. The inclusion of a psychological construction demonstrated the purpose of the work domain. Keith refers to the adage 'I work to live. I don't live to work'. However, the psychological constructions of the work domain by border-enforcers did not always have partner support, perhaps because the psychological plane cannot easily be seen by the partner. Instead, partners emphasised the physicality of the home/work structures or buildings as these provided clear structural cues on when to create the separation between work and home.

The role of time as both a delineator and solidifier are further unpacked in how border-enforcers defined after-hours work. Kevin, for example, used highly specific circumstances:

the mornings before 8 o'clock I generally don't answer my phone and don't use it for work purposes. In the evenings, I will answer it up to about 19:00 or 20:00 after that not easily unless there was something planned. If somebody is planning an upgrade for work on a weekend I might, otherwise it would be pretty much personal use.

Asked when he [Kevin] would allow 'after-hours' smartphone calls for work, he outlined a meticulous screening process, offering insight into the way they discerned between the importance and urgency of the after-hours calls:

I know there is something urgent happening if the person calling, calls repeatedly but if it's off hours I generally wouldn't answer, I'd ask them to message me with whatever the issue is because project management generally doesn't have unplanned crises like you have in tech support or other fields ... I know there is some crisis or if it's a particular person, so if it's my boss calling or my project sponsor calling then I would typically answer. It also doesn't happen often, maybe once a month. [Kevin]

Both border-enforcers and their partners agreed with the facilitation of important and urgent after-hours smartphone calls.

To ascertain how border-enforcers developed their current regulation approach, they were probed on how they arrived at their current construction of work and home. For the border-enforcers their previous interactions shaped their construction of the border. Border-enforcers had a discretionary approach by weighing their past interactions with the communicator against the perceived urgency and/or importance of the message. This included the communicator's level of authority in relation to them, as well as the time, location of the communication, and the effects that it may have on them and their families:

I think previously I didn't achieve it [work-life balance] because I was trying to solve everything and deal with everything ... I realised somewhere along the line that you can't solve all the problems and sometimes you just have to let go and say I can't deal with this, or I

am not the right person to deal with this and to filter that, ... to learn to ignore certain things. If three people are screaming, you can only deal with one, you pick the one that's screaming the loudest or as the problem that's most appropriate for your solution or that will give the most benefit to solve. And people somehow –if you ignore a problem for a day or two, the minor problem could solve magically, and the tougher problems come back and then you can solve. [Kevin]

To obtain greater insight into the development of the discernment mechanism that they used, Kevin was probed further about how they developed these skills. This was gained through using technological features (e.g. caller ID), social comparison (i.e. would I allow this interruption if I were in a face-to-face meeting), and past experience:

I think it has also become easier to manage ... because with caller ID you can save a number. I often save numbers which are unimportant, such as 'salespeople do not answer' and then if they phone from that number again you will know to ignore. But work-related calls you have to make a judgment call – is it the right kind of person or the right kind of issues to deal with or to allow to disrupt the conversation. I mean, if you were standing in a passage and somebody came walking up and said I've got a problem would you finish your conversation and then give them a go, or would you know to interrupt your conversation ... You have to evaluate what you're busy with, versus what could possibly be coming in and sort of prioritize that way. But I think it's also experience. You have to build up the experience to know which problems did arise when and allow it to be interrupted. [Kevin]

Border-enforcers would change work situations (and sometimes whole careers) to gain more control over their life and achieve a greater sense of balance. This mechanism started with self-observation resulting in a judgement and self-response. This discernment closely resembles Bandura's (1991) self-regulation.

4.4. This 'little piggy' made their home of bamboo: border-adapters

Bamboo is a fast-growing, sustainable plant used frequently as a building material and construction tool as it is both durable and flexible. Bamboo can additionally bend while still maintaining its integrity, very much like the border-adapter who acclimatizes to the circumstances placed upon them, finding a course which best fits both the work and home domains. Interestingly, border-adapters and their partners, agreed with a multi-state construct of physical and psychological planes when defining their home domain. Daniel defined home as 'I'm a wanderer at heart so I don't have a spot. Wherever I am, that can become home'. Their partner, Damien reinforced this view, referring to home as 'The cottage where we're living in ... and me'. The home domain for border-adapters was therefore viewed as an entwinement of the psychological and physical planes providing them mastery and control over the space and time where they were located. This process was led by their own arbitration process which relied on the guidance they received from their internal and external border-keepers. Declan therefore defined their 'home' as 'physical elements, it's a three-bedroom town house ... I think psychologically, my room is my haven'. When mobile communication was received while the border-adapter was at home, they took cognisance of these cues in their environment.

Work, in contrast, was defined by border-adapters and their partners as being physically constructed with a clear domain delineation. This differs from border-enforcers who defined their work and home predominantly as physical and temporal plane constructions, while border-adapters used physical and psychological constructions. Acceptance or rejection

was determined by their learnt skills, developed through prior border arbitrations. The psychological constructions enabled border-adapters to be more flexible. For both border-enforcers and border-adapters this was developed from previous experience corresponding to the perceived urgency or importance of a communication.

In order to re-establish and strengthen the border between the domains, time was used by border-adapters to cue an appropriate response. Daniella defined their workday as falling between 07:00 and 17:00 in summer and between 08:00 and 17:00 in winter:

Work is the moment when I get into my car and drive to the place where I sit at a computer most of the day writing reports or go to site ... home is not the gym because that's a different thing, but it's ... where I cook, it's where I eat, it's where I sleep, it's where I relax, unwind. [Daniella]

However, Daniella acknowledged that they were also adaptable and would allow after-hours work if there was perceived urgency:

Absolutely have to ... such as an insane deadline that I have to work from home, but otherwise I will not, unless there was an emergency at work. [Daniella]

There was an ambiguity in how border-adapters used time as a plane construction. Derrick, for instance, defined their working hours on their smartphone as '09:00 to 17:00' and after-hours from '17:00 to 09:00'. However, they went on to explain that they would work: 'Till I'm done, I generally work till somewhere between 11:00 and 1:00 [at night]'. Despite this ambiguity, border-expanders often had very strict criteria for when they would respond to after-hours communications, in Derrick's case this is supported by the workplace culture:

As far as I can, I do not ... Very, very far. Generally, everyone that I worked with has actually been conditioned to that, it's impossible, unless hell comes down, I just ignore the calls blatantly and I'll call back in the morning and say, sorry, but I didn't want to talk to you last night. [Derrick]

This infers that border-adapters can both establish and release borders. The border-adapters' ability to arbitrate flexibility with incoming communication shows the development of an internal mechanism based on pre-established criteria. An instance of this can be observed in David's reasoning why they would answer an after-hours smartphone call based on their employer's behaviour which creates significant social pressure:

I feel guilty because all the other people, my boss, reads his emails 24/7, why don't I? My boss takes phone calls 24/7, why don't I? So, in a way, I feel obliged to phone or to answer calls, answer emails anytime, but I don't. [David]

Daniel provided more specific cues for making selective determinations of when to answer a work call after-hours including the seniority of the person calling, the stage of the project cycle, and whether the work schedule is on a tight deadline. The way in which the importance or urgency of the communications was determined by the border-adapters was related to their previous interactions and relationships. The level of the communicator's authority in relation to the border-adapters was additionally found to be a determinant. After-hours communications were often accepted when they came from a person of authority in relation to the individual and were viewed as both urgent and important.

Border-adapters differed from the other groups by scaffolding their past interactions with the communicator against the perceived urgency or importance of the message. This is a good representation of Bandura's self-regulation concept as the psychological mechanism. A key aspect of self-regulation is the role of social learning (family, peers, employers as border-keepers) imparting a behavioural norm onto the border-adapter. As an example, Daniella, provided a recollection on how they developed firmness and flexibility their borders by using a combination of past experience weighed against the perceived urgency and importance of the communication:

Work disrupted me a couple of times when I was with my family on weekends. I think that's when I started learning to be, okay now, [expletive] these people! You know this is my own time; this is my 'me time', I'm not getting paid sufficiently to warrant phone calls from clients on Sunday lunch time. So that's when I would start being really vigilant ... Normally I don't answer work calls after-hours ... so if I'm working on a project where I'm the head and I see a client phones me on a Saturday morning, I know something is going wrong on site, so then I'll answer it. [Daniella]

David recounted a difficult incident where they learnt that urgent communications from their employer should be considered as important. They were out with their friends one evening and their employer called. They refused to answer the smartphone as they were not on call and were not being paid overtime. When David arrived at work the next day, their employer reprimanded them as he believed that they were obligated to accept the intrusion as the issue was urgent. Due to this incident David subsequently felt more obligated to answer 'urgent' smartphone calls from their employer (which their employer considered as important).

4.5. Mechanisms to re-establish borders

When borders have been crossed or have become permeable it is necessary to find mechanisms to re-establish those borders. Border-expanders did not appear to have any domain or border mechanism to re-establish control over the border. However, the scenarios described above offer potential insight into how border-enforcers and border-adapters could evolve into border-expanders and vice versa. In an attempt to reclaim their own home domain space, some informants reported having to resort to changing their workplace, career path, employer, and even their whole career. Daniella, for instance, described how she re-centered her work situation:

Eventually I left the company, that's how I dealt with it ... it just became too much and I was increasingly unhappy in the job and I was getting no support. But enough is enough. So actually, I started not answering phone calls on weekends and they started getting quite upset with me, and I said, well I'm sorry but I'm burning out and you need to respect my boundaries. [Daniella]

Similarly, Albert had recently changed his career a week before the interview, as Anna [his partner] had persuaded them to seek counselling:

The problem was really not saying no at work, so just taking on more and more, ... your personal goals in life and any of your home life would come secondary. [Albert]

Albert was forced to re-evaluate his decision-making by developing a hierarchical system to evaluate the importance and urgency of communications and to be able to justify his behaviour to himself and his partner:

You use a robot [traffic light] system. So red is very serious, anything can happen anytime. Orange is kind of cautious and your green, they're okay, you know, you don't need to worry so much. So your green is, okay, hang on, I can miss this call, get back to them first thing in the morning. But if you know its red-alert clients, then, you're absolutely going to take that call, even if you're sitting around the dinner table. It's just one of those things that become part and parcel of the industry. [Albert]

Anna explained that the situation was '... so bad that when I saw enough, I want to stab him [Albert] in the head'. She attempted to improve the situation by giving '... him a [self-help] book ... So he started working through that and that raised questions and he has done life coaching in order to actually put up boundaries'.

5. Discussion

This study aimed to determine how three border-keeper groups of South African managers managed their after-hours work communications received on a smartphone. Our findings extend on White and Thatcher's (2015) study by providing greater detail about the mechanisms used to arbitrate work communications by these border-keeping groups. A key component of Clark's (2000) border theory relates to how border-crossers move between work and home domains over the course of the day while they simultaneously attempt to reduce role conflicts. Clark (2000) therefore posits that border-keepers structure a border between work and home utilising physical, psychological, or temporal planes. The findings are first discussed in relation to the four research questions.

5.1. Defining the work and home domains in terms of the three planes

Border-expanders predominantly defined their home domain within the physical plane and their work domain within the physical and psychological planes. As with border-expanders, the border-enforcers defined their home domain predominantly as a physical plane construction, but their work domain was defined utilising the physical, psychological, and temporal planes. However, whereas the border-enforcers strictly defended their home domain against intrusions using the physical plane, the border-expanders allowed the physical plane manifestation of the home domain to be consistently penetrated by the strong psychological plane of the work domain. The strong physical home domain allowed border-enforcers to be cognisant of their surrounding physical space when receiving after-hours smartphone communication. If the origin and the domain of the communication received did not match, border-enforcers took note of the cues around them and mostly rejected the communication. Border-adapters defined their home domain utilising physical and psychological planes, and their work domain using the physical plane. The physical and psychological cues of the home domain provided them with cues as to where they were located and what they should be doing enabling them to be more flexible about when they allowed communications to infiltrate the home domain or to firmly establish a border. These understandings of how the three different planes manifest in different groups is a novel finding helping to explain why borders are perceived as either porous or strong.

5.2. Determining border-crossing behaviour

For border-expanders, the border was straw-like where after-hours usage of their smart-phone was not only expected, but those around them were expected to do the same. For the border-expanders, their expectations were validated by arguing that they behaved in this way so as to ensure their current and future career sustainability and trajectory similar to what Park et al. (2020) and Storch and Juarez-Paz (2022) found. For border-enforcers, the border was perceived as strong (stone-like) enabling them to be better equipped in preventing work intrusions into their home domain. As with border-adapters, the border-enforcers also screened all communication received via their smart-phone, however, border-enforcers required clear arguments (largely internal agreements) to justify any work intrusions into the home domain. Border-enforcers used temporal cues found on their wrists, smartphones, laptops and on the walls to strengthen their border and to keep their domain constructions separate (Clark, 2000; Nippert-Eng, 1996). For border-adapters, the border was flexible (bamboo-like) enabling them to arbitrate the border using unique screening criteria based on past experiences. This facilitated role-cycling (Kossek & Lautsch, 2012), enabling work-life balance even while boundary-crossing. The partners of border-adapters did not always agree with the border arbitration decisions though, suggesting that these were based either on the border-adapter's perceptions or their active decisions rather than an agreement between partners. Across the groups we did not find instances of documented agreements being reached between the individual and their organisation on how work was to be constructed. Usually these agreements were informal and based on past experiences, organisational culture, and project lifecycles.

Management can assist in reducing role conflict by developing policies which detail when and where roles should be performed and the duration for each (Park et al., 2020). These policies should be conveyed to employees through formal communication channels and through leadership behaviour that models these policies (Schlachter et al., 2018). Senior management could be incentivized to create policies by recognising that appropriate work-family balance policies can increase staff retention (thereby reducing recruitment and training costs) and reduce chances of employee burnout. At the government level, legislation that protects employees' ability to disconnect from work demands can be encouraged, similar to the European Union's Directive 2019/2181(INL) which protects workers' rights to disconnect from work-related tasks and communication outside of agreed working hours (European Parliament, 2021). The recruitment of managerial staff, for this study, came with an unforeseeable consequence. Under the South African Basic Conditions of Employment Amendment Act (No. 11 of 2002), organisations are not required to pay their employees overtime when they have staff who report to them. This creates a legal loophole for exploitation, as it is often interpreted that managers might be expected to work after-hours with no additional compensation. To overcome this situation requires further legislative protections from excessive work demands for managers in South Africa.

5.3. Self-regulating border-crossing

While we found evidence of border-keeping behaviour from peers, employers, and family members (Clark, 2000), this was also related to the industry they were in as well as the

positions they held. From the work domain, the prominent message, especially from employers and peers, was to enable border-crossing behaviour. The ultimate decision though, was based on the internal dialogue of the border-crosser. Border-expanders explicitly made the decision to permit work to take place at home via their smartphone. For border-expanders this pressure was felt to be placed on them by employers and clients. In other studies, this pressure has been attributed to organisational power dynamics (Steffensen et al., 2021) and industry based norms (Derks et al., 2014; Gadeyne et al., 2018) that cue managers to adopt desirable behaviours which are beneficial to the organisation. This process closely resembles that of the self-observation and judgement components found in the development of self-regulation (Bandura, 1991).

Border-enforcers usually rejected work communications at home and governed the process themselves following the self-observation and judgement components of self-regulation Bandura (1991). Border-enforcers would make exceptions depending on the communicator's role in relation to their own as well as the perceived urgency and importance of the communication. Their past experiences helped guide how this arbitration process took place. Border-enforcers used tactics like caller ID, careful scaffolding of the time of the communications, past experiences with similar communication, the role of the communicator, and the urgency of the call. Border-enforcers rarely compared their work arrangements to others.

In general, border-adapters preferred a robustly delineated border between work and home. Under uniquely-defined criteria, border-adapters were flexible and permitted some work communications to enter the home domain. Border-adapters' border delineation and solidification closely resembles the self-response component in self-regulation (Bandura, 1991). Border-adapters carefully assessed all after-hours work communications in the home domain to determine what to accept or reject. Their arbitration process relied on internal and external border-keeper guidance, strengthened by their own past experiences. The border-keeper guidance supports Clark's (2000) original theory, but like Storch and Juarez-Paz (2022) suggests that there is also an internal self-regulation component based on past experiences as well as a determination of the urgency and importance of the communication.

5.4. Re-establishing control over the border

Border-expanders reported increased disagreements with partners, spouses, children and, in some cases, this ultimately led to the complete breakdown of these relationships. Border-expanders appeared to allow this outcome rather than trying to re-establish control over the border. On the other hand, border-enforcers and border-adapters were more likely to make alterations to their work environment (e.g. change their career, role, or organisation), would seek external professional help (e.g. coaching or counselling), or would develop their own 'traffic light' system in an attempt to reduce the work-family conflict from work's intrusion into the home domain after-hours. If border-crossers are unsuccessful in their efforts to re-establish the border, they face a multitude of negative psychological and health consequences the resulting work-family conflict (e.g. Demerouti et al., 2005; Eby et al., 2010; Geurts et al., 2005; Montgomery et al., 2005; Peeters et al., 2005; Rost & Mostert, 2007; Van Hooff et al., 2006)

5.5. Study limitations

Since the number of participants to secondary participants was unbalanced, it was not possible to get a holistic view of the border-keepers' behaviour. The qualitative results may therefore contain some inherent biases towards the primary participants. All participants were South African. While this responds to Kossek, Baltes, et al. (2011b, p. 431) call for more work-life balance research that does not originate from the United Kingdom or the United States, it is important to acknowledge the difficulty in generalising these results beyond the South African context. None of the border-adapters had children at the time of being interviewed. It is possible that a lack of parental responsibilities may have supported their border-adapter behaviours which would have mean more difficult to support if they also had children. While the sample was drawn from a broad array of organisations, this study does not compare the potential influences that different organisational cultures (Schein, 1986) might have on work-home behaviours. There were no specific questions probing the influence of organisational culture on their behaviour, although there were suggestions in the data that organisations had different expectations of their employees' behaviour (e.g. many border-expanders described themselves as working in client-facing organisations). The study's data were collected before the Covid-19 pandemic and the related lockdown restrictions which forced many people to work from home. Even though many employees may have returned to physical workplaces, they will have experienced an intense period where working from home was the norm and will carry those experiences into their border-crossing behaviour. Without further investigations it is difficult to say how those Covid-19 pandemic experiences might have changed people's border-crossing behaviours and the influences of their border-keepers. Indeed, Enaifoghe and Zenzile (2023) found that many employees in South Africa struggled with the work-from-home routine enforced on them by Covid-19 restrictions.

6. Conclusions

The key contributions of this research to border theory are that: (1) the combinations of the three planes for the different border-crossing groups helps explain how borders and border-crossing behaviour is constructed; (2) prior experiences with border-crossing or border-segmenting shape future crossing/segmenting behaviours; and (3) self-regulation is clearly evident in the border-crossers' explanations of their behaviour with one of the key self-regulation mechanisms (used by border-enforcers and border-adapters) being the determination of the urgency and importance of the smartphone communication (through indicators such as caller ID, the identity of the caller, the project cycle, and how many times a person calls).

Disclosure statement

No potential conflict of interest was reported by the author(s).

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