Virtual reality through the customer journey: framework and propositions

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Please cite as:

Hollebeek, L., Clark, M., Andreassen, T., Sigurdsson, V. and Smith, D. (2020), Virtual reality through the customer journey: Framework and propositions, *Journal of Retailing & Consumer Services*, In press, DOI: https://doi.org/10.1016/j.jretconser.2020.102056.

Abstract

While virtual reality's importance is increasingly recognized in marketing, its role in the customer journey remains nebulous. We define virtual reality through the customer journey (VRCJ) as firms' use of computer-mediated interactive environments capable of offering sensory feedback to engage consumers, strengthen consumer/brand relationships, and drive desired consumer behaviors at any stage of their journey. To better understand VRCJ, we classify VR archetypes, formats, and content features, followed by the development of a conceptual framework and an associated set of propositions of VRCJ. We conclude by discussing important theoretical and practical implications that arise from our analyses.

Keywords: Virtual reality, customer journey, engagement, meaning-making, brand relationship quality.

Virtual reality through the customer journey: Framework and propositions

1. Introduction

Leading companies, including *Coca-Cola*, *McDonald's*, *IKEA*, and many others are increasingly adopting virtual reality (VR) to further consumer relationships. With VR being heralded as the fastest-growing form of video traffic, it offers significant opportunity to marketers (Goh and Ping, 2014), as substantiated by Goldman Sachs' forecast $80b of VR-related revenue by 2025 (Ericsson, 2017). Correspondingly, Statista data indicates that 70% of consumers aged 19-49 are *very* or *quite interested* in VR (Weinswig, 2016).

Craig et al. (2009, p. 11) define VR as "media comprising interactive 3D computer simulations that sense the participant's position and actions, provide synthetic feedback to one or more senses, [and yield] feeling immersed in the simulation." While gaming represents VR's major application to-date (e.g. *Batman: Arkham VR*), other growing uses include virtual travel (e.g. *Qantas Virtual Destinations*), shopping (e.g. *Alibaba's Buy+*) and events (e.g. virtual sports matches, such as *Jaguar*'s VR-based Wimbledon sponsorship), thus reflecting its broad applicability (Barnes, 2016; Gibson and O'Rawe, 2018). VR therefore offers a valuable marketing tool, with its applications ranging from VR-based focal offerings (e.g. *Disney's Movies VR*), promotional tools (e.g. *Coca-Cola's* Virtual Locker Room, 2014 FIFA World Cup), to emerging distribution channels (e.g. *Wayfair IdeaSpace*), or VR's ability to command premium prices (Kowatsch and Maass, 2010).

VR can help prospects better evaluate brands, including in contexts characterized by the customer's remoteness from the offering (e.g. e-commerce) or where 2D representations fall short (e.g. tourism; Noguti, 2016; Peck and Childers, 2003). It can also render traditional brand communications more experiential, offering a desired *pre*-consumption experience that can help lift brand attitudes (e.g. *New York Times*' VR app that allows readers to stand alongside Iraqi forces in battle; NYT, 2017). By complementing or substituting other

marketing tools, VR can thus nurture the customer's experience throughout their journey, thus offering major benefits to marketers (Dobrowolski et al., 2014).

Despite its growing adoption, insight into marketing-based VR applications is lagging behind (Manis and Choi, 2019). That is, while the need to better understand VR is raised since the 1990s (Hoffman and Novak, 1996), little remains known regarding consumers' drivers/outcomes of marketing-based VR applications through the customer journey (Goh and Ping, 2014), as explored in this paper. By examining key VR dynamics in the customer journey (VRCJ), we address the MSI's (2018) Research Priorities of *The Customer-Technology Interface* and *Characterizing the Customer Journey*, which denotes the holistic, "entire process the [consumer] goes through" (Lemon and Verhoef, 2016, p. 71).

Our contributions are as follows. First, while VR research is proliferating, broad, systematic understanding of VR's drivers and effects through the customer journey remains scarce (Voorhees et al., 2017; Farah et al., 2019). We therefore define VRCJ and classify VR archetypes, formats, and content features, which we expect to impact the customer journey-based user experience (Flavián et al., 2019).

Second, we develop a framework of VRCJ and its *pre-*, *intra-*, and *post-*VR interaction dynamics through the customer journey (Voorhees et al., 2017), reflecting MacInnis' (2011, p. 141) postulation that knowledge advances "not only by …developing [concepts] but also by conceptualizing their relationship to other concepts, often in a nomological network." We identify the consumer meaning-making motives to understand, experience, act, and socialize through marketing-based VR (Frankl, 1985; Fabry, 2013), which in turn are influenced by consumer VR readiness at the *pre-*VR experience stage of their journey (Parasuraman, 2001). During (*intra-*) VR interactions, consumers' cognitive, emotional, behavioral, and social engagement emerge, which reflect the consumer's investment in their marketing-based VR interactions (Hollebeek et al., 2014, 2019a). VR

engagement in turn affects consumer-perceived brand relationship quality at their journey's *post*-VR interaction stage (Fournier, 1998; Hudson et al., 2016).

Third, we develop a set of propositions of VRCJ that offer a springboard for further research in this growing area. In line with the framework, our propositions first delineate the effects of VRCJ drivers on consumer engagement at the customer journey's *pre*-VR interaction stage, followed by engagement's impact on consumer-perceived brand relationship quality at the *post*-VR interaction stage. Collectively, the propositions synthesize VRCJ's capacity to build or strengthen consumer/brand relationships, corroborating VR's value as a marketing tool (Goh and Ping, 2014; Homburg et al., 2017).

The next sections unfold as follows. We review VR literature and conceptualize VRCJ, followed by the development of VR archetypes, formats, and content features in section 2. In section 3, we construct a framework and an associated set of propositions that incorporate consumers' *pre-*, *intra-*, and *post*-VR experience, which collectively comprise VRCJ. In section 4, we conclude with theoretical and practical implications that arise from this research.

2. Literature review and VRCJ-based conceptual development

2.1 Customer journey & experience

While advancing rapidly in the literature, the *customer journey*, surprisingly, has received scant definitional development. Instead, it is typically linked to the *customer experience* (Norton and Pine, 2013), which has been defined as a "customer's journey with a firm over time… across multiple touch-points" (Lemon and Verhoef, 2016, p. 6). Differing stages in the consumer's purchase-related decision-making process - or journey - have been identified (Hollebeek, Sprott, and Andreassen, 2019), including Voorhees et al.'s (2017) tri-partite journey, with each phase characterized by unique experiential hallmarks (Kuehnl et al., 2019).

First, in the *pre*-VR encounter, consumers gain awareness of marketing-based VR content, from which their interest/desire to interact with the content may develop (e.g. by viewing a firm's offerings in a virtual catalogue; Voorhees et al., 2017). Here, consumers' materializing desire to interact with VR-based stimuli is driven to an important extent by their meaning-making motives or their desire to create purpose or meaning from understanding (comprehending), experiencing, acting (performing/doing), and/or socializing with others (Frankl, 1985; Fabry, 2013; Hollebeek, Malthouse and Block, 2016).

Second, the core VR encounter or *intra*-interaction experience reveals consumers' engagement *during* their VR-based interactions (Harrigan et al., 2018; Hollebeek and Rather, 2019). Engagement is defined as the consumer's investment of operant/d resources in their interactions with marketing-based VR (Kumar et al., 2019; Hollebeek et al., 2019a). Through these investments, they can become immersed in VR-based content, which is known as *telepresence* (see section 2.2), thereby raising brand trust and value (Hollebeek and Macky, 2019; Chen et al., 2018). At its top end, the *intra*-interaction experience entails *flow*, a state of optimal experience that implies focused attention, effortless concentration, and loss of self-consciousness (Csikszentmihalyi, 1990).

We distinguish consumer *engagement* and *experience* as follows. As stated, motivational engagement reflects consumers' cognitive, emotional, behavioral, or tangible resource investment in their brand interactions (Hollebeek et al., 2019a, p. 166). However, customer experience reflects the individual's cognitive, emotional, behavioral, sensory and social "responses evoked by brand-related stimuli" (Brakus et al., 2009, p. 52). Further, while engagement's scope is limited to consumers' *intra*-interaction dynamics (Hollebeek et al., 2014; Islam et al., 2019; Hollebeek, 2011), customer experience spans the individual's entire brand/purchase-related journey (Lemon and Verhoef, 2016; see section 3). Consequently, we view engagement as a theoretical subset of the customer experience.

Third, the *post*-VR encounter captures the dynamics transpiring after consumers' marketing-based VR interactions (Voorhees et al., 2017). Here, consumers may wish to continue interacting with marketing-based VR content, thus triggering a new *pre*-VR encounter. We next synthesize our observations from existing VR research.

2.2 VR literature review and proposed VRCJ definition

After its original development for military purposes, VR has found applications in numerous fields, including psychology (Riva, 2005), engineering (Söderman, 2005), design (Oh et al., 2004), and marketing (Nantel, 2004), among others. While academic marketing interest in VR has remained dormant until recent years, its current upsurge is aided, among others, by rapid technological developments coupled with consumers' growing technology receptiveness (Wexelblat, 2014). Given the paucity of marketing-based VR research, we review VR literature below, from which we conceptualize VRCJ.

Interchangeable VR terms include *virtual worlds* (Animesh et al., 2011), *virtual environments* (Fox et al. 2009), *virtual workstations* (Magnusson et al., 1998), and *VR systems* (Sherman and Craig, 2003), which offer interactive 3D computer simulation-based media designed to foster participant interaction and immersion, the user's absorption in VR content (Gronstedt, 2016; Wang and Calder, 2006).

Fox et al. (2009) identify three VR research strands. First, *VR as an application* highlights VR's technical aspect (i.e. *what VR is*), including its interfaces/technology (Steuer, 1992), as emphasized in the technological (e.g. computer-science) literature. Second, *VR as a method* emphasizes VR's capability as an empirical research tool (Pierce and Aguinis, 1997). Adopting VR in quantitative research allows a degree of control that is usually only equalled in lab environments, while offering a realistic 3D experience (Meißner et al., 2017), anchoring this perspective's fit in the methodological literature. Third, *VR as an object*

discusses VR's user effects, including the development of recall, engagement, and experience through sensory (e.g. audio-visual/haptic) receptors (Berger et al., 2018; Piyathasanan et al., 2015), fitting with our consumer-centric focus.

Table 1 outlines VR definitions sourced from the academic, consultancy, and practitioner discourse, which reveals the following observations. First, VR's definition is debated (Li et al., 2002), which arises from its differing strands and broad range of applications. While many of the listed definitions reflect *VR as an application* (e.g. Coates, 1992), *VR as an object* increasingly features in more recent conceptualizations, particularly those anchored in marketing (e.g. Meißner et al., 2017), like this study.

Table 1 about here

Second, VR implies the existence of a *virtual world* or environment that offers a simulated reality (Sherman and Craig, 2003). The virtual world may "look and behave the way that real life does... [e.g. *SimCity*] or incorporate features that differentiate [it] from anything we normally experience" (e.g. *World of Warcraft*; Papadopoulou et al., 2001, p. 328). Virtual worlds thus vary in their resemblance to reality (Thurman and Mattoon, 1994).

Third, in the virtual world, consumers (represented by avatars) *interact* with the interface and the characters it contains (Nagy and Koles, 2014; Shin and Shin, 2011). Pennington (2001, p. 33) and Steuer (1992, p. 74) view *interactivity* as the user's ability to affect the form or content of their mediated experience, to which Van der Meijden and Schijven (2009, p. 1180) add the user's value-extracting ability. VR-based interactivity may span several actors (e.g. platform-to-user, user-to-user; Wagner et al., 2005). While most VR systems offer participatory user experiences, consumers may also stand outside the imaginary world while communicating with characters/objects inside it (e.g. *mirror worlds*; Wikström et al., 2002).

Fourth, VR offers *sensory feedback* (vividness) that reflects how an environment presents information and responds to the user's senses (Cowan and Ketron, 2018; Sutcliffe, 2003). The more vivid a VR environment, the richer its representation and the greater consumers' expected immersion in it (Van Kerrebroeck et al., 2017), thereby helping to deepen the brand relationship (Palmer, 1995; Palmatier et al., 2006).

Fifth, physical or mental *immersion* (telepresence) refers to a user's sense of actually being present in the mediated environment, or the mental process of perceiving a mediated world as non-mediated (Cummings and Bailenson, 2016; Steuer, 1992). Telepresence thus implies the consumer's full concentration on the VR stimulus, forgetting everything else around oneself, and a perception of time passing fast (Schaufeli et al., 2002). Based on our review, we conceptualize VRCJ as *firms*' *use of computer-mediated interactive environments that are capable of offering sensory feedback to engage consumers, strengthen consumer/brand relationships, and drive desired consumer behaviors at any stage of their journey.*

2.3 VR archetypes, formats & content features

VR's growing adoption goes hand-in-hand with its wide-ranging applications. Owing to its breadth of application and limited understanding to-date, we map VR's differing types that are available to marketers in an interrelated set of typologies centering on VR archetypes, formats, and content features.

Theoretical typologies are a widely-used classificational approach in (marketing) strategy to understand the categories inherent in specific phenomena (Hambrick, 1984; Doty & Glick, 1994). To better understand consumers' VR journey, we proceed by classifying VR archetypes, formats, and content features, which are subsequently deployed in our VRCJ-based framework (section 3).

2.3.1 VR archetypes

VR can be implemented on any computer platform, ranging from desktop computers, cellular phones and tablets, to head-mounted devices and virtual environments where users move around a physical space while wearing computer-equipment (Fox et al., 2009; Nascimento et al., 2018). VR archetypes describe the nature of the VR *interface* that enables users to communicate with a computer (Mulder et al., 1992).

To categorize VR archetypes, we reflect on Breidbach et al.'s (2014, p. 594) *platform archetypes*, which are physical/virtual touchpoints that facilitate value creation. The authors deploy two dimensions: (i) Physical (tangible) *or* virtual (intangible) platforms, which however coincide in VR (e.g. physical *HTC Vive* device running VR software), and (ii) interactional (social) *or* transactional (sales-focused) platforms, which can also overlap in marketing-based VR applications (e.g. *Toms*' social interaction-facilitating VR *while* fostering sales; Li, 2016).

We therefore refine Breidbach et al.'s archetypes for applicability to marketing-based VR applications. To do so, we iteratively consulted relevant VR literature, amended the authors' classification, and returned to the literature as needed. Given VR's rapid development, we included the recent practitioner/consultancy discourse to deepen our understanding and ensure currency of our analyses (e.g. Perkins-Coie, 2018; PwC, 2018; KPMG, 2016).

Through this process, we adapted Breidbach et al.'s first dimension to *autonomous*/*programmatic* VR platforms, which are complementary in marketing-based VR applications. *Autonomous* platforms center on the hardware used to operate VR, including *Microsoft*'s *HoloLens*, smartphones, tablets, or other computers (Manis and Choi, 2019). *Programmatic* platforms are software-based VR programs integrated in autonomous host devices (e.g. VR apps; Rauschnabel et al., 2019).

Second, we addressed Breidbach et al.'s *interactional*/*transactional* platforms, which while applicable to VR, again fell short in differentiating VR interfaces. Instead, we identify these as VR-centric (sole VR functionality) or non-VR centric (VR functionality shared among the platform's other uses; PwC, 2018, p. 9). Our VR archetype dimensions thus include:

a. Autonomous, stand-alone VR hardware tools (e.g. *Oculus Go*) versus VR software programs incorporated in host devices (e.g. VR apps; Kuchera, 2016), and
b. *VR-centric* tools that feature sole VR functionality (e.g. *Sony Smart Eye Glass*), versus *non-VR centric* tools, where VR functionality exists alongside the tool's other major functions (e.g. smartphone; Auer and Tsiatsos, 2018).

Table 2 about here

Based on these dimensions, we develop a 2x2 matrix that comprises four VR archetypes (Table 2). First, *autonomous VR-centric VR* deploys hardware devices that offer core VR functionality in marketing (Kannan and Li, 2017; Zeltzer, 1992). For example, *Microsoft*'s *HoloLens* is a hardware tool designed to offer immersive VR experiences (Statt, 2015). These devices do not require a separate host device (e.g. smartphone), like *programmatic* VR tools. To reduce host device reliance, some programmatic VR tools are moving to more autonomous forms (e.g. *Facebook*'s *Oculus Go VR-Headset*; Morby, 2017).

Second, *autonomous non-VR centric VR* are hardware devices that incorporate VR functionality alongside other functions (e.g. service robots presenting VR content, among their broader repertoire of tasks; Kumar et al., 2016). VR technology can also be used to remotely control (e.g. service) robots, thus further facilitating customer/brand interactions and relationships (Gordon, 2017).

Third, *programmatic VR-centric* VR tools are software tools that center on VR functionality (e.g. VR-based social media websites/apps, like *Orbulus*), which are displayed through hardware-based host devices (e.g. desktop computers/tablets; Kannan and Li, 2017). Another example is head-mounted VR tools that require a host device to display VR content (e.g. *Google Cardboard* applications; Weinswig, 2016; PwC, 2018).

Fourth, *programmatic non-VR centric* VR tools operate in conjunction with autonomous hardware devices and offer a range of capabilities beside VR functionality. For example, *Facebook*'s *Virtual Selfie Stick* is a software-based VR component that can be used in VR (e.g. to depict users' virtual journeys; Hopkin, 2017). However, its *non*-VR centric nature implies that it operates alongside the platform's other (e.g. social media) functions (Sanderink and Boon, 2017; Rasouli and Timmermans, 2016). We posit:

> P1a: *VR-based virtual world-hosting archetypes comprise autonomous VR-centric, autonomous non-VR centric, programmatic VR-centric, and programmatic non-VR centric tools.*

2.3.2 VR formats

We next classify VR formats that outline the VR-based virtual world's presentation (display) format to users, including VR-based gamification, VR video, VR-based shopping, and VR-based events. Formats exist independently from the deployed VR archetype and reflect VR's strategic purpose (e.g. retailers deploying VR-based shopping; McLean and Wilson, 2019). Our VR formats can be combined with (a) one another in VR-based virtual worlds (e.g. VR-based gamification/video, such as *Grand-Theft-Auto*'s virtual recorded car heists), and (b) any of our VR archetypes. Our VR formats are outlined below.

VR-based gamification is "a process of enhancing an [offering] with affordances for gameful experiences [through] mastery, autonomy, flow, and suspense …to support value

creation" (Huotari and Hamari, 2017, pp. 23, 25). An example is restaurants offering a badge to customers checking in weekly on *FourSquare*. Gamification can also include artificial conflict defined by rules, with quantifiable outcomes (e.g. virtual sports-matches; Högberg et al., 2019; Leclercq et al., 2018, 2020). While gamification commonly caters to consumers' hedonic/social needs (e.g. multi-player games), *serious games* - mental contests played with a computer that use entertainment to further training, education, or strategic communication goals (Okazaki and Yague, 2012) - offer a core functional purpose (Hookham and Nesbitt, 2019). Other common uses include promotion (e.g. *Heineken*'s *Star Player*), communication, education, and gamified customer support.

VR video provides "immersive [3D] video content accessed through [archetypes, e.g. *YouTube*] ...that create the user's illusion of being part of the [animated] video" (e.g. *Google Cardboard*'s CMOAR virtual roller-coaster ride; Brown, 2017a). Given its immersive capability, VR video's uses include promotion (e.g. *StarWars* 360 fly-through movie ad) or fostering functional objectives (e.g. immersing patients to overcome phobias; Levac et al., 2012). Given its fictitious nature, VR video differs from *360° video* that transmits real-world, live recordings from multiple angles (Brown, 2017b).

VR-based shopping. VR can also be used to enhance the shopping experience (McLean and Wilson, 2019), including by displaying products in electronic catalogues, stimulating virtual trial, offering customer support (e.g. *Shopify*'s *Kit*), or by virtually launching new products (Agarwal, 2015; Lombart et al., 2019; Arentze et al., 2005). Tourism providers also increasingly use high-fidelity virtual (e.g. Taj Mahal) tours to instill consumers' sense of presence and spark their desire to physically visit the location.

VR-based events. Events are "planned spatio-temporal phenomena [featuring] interactions among the setting, people, and management systems" (Getz, 2008, p. 404). VR can be used to promote or enhance physical/online events, such as *Coca-Cola*'s Virtual

Sleigh Ride that is run alongside its physical annual Christmas event (Pearlman and Gates, 2010), or it can be deployed as the core event theme (e.g. *VR Summit*; Yeoman et al., 2012). Virtually-attendable VR-based events may cater to consumers' desire to understand (e.g. virtual conference), experience (e.g. virtual concert), act (e.g. virtual sporting event), or socialize (e.g. virtual speed-dating). Socializing can be with real individuals (e.g. other users), virtual characters, or some combination thereof (Lecuyer et al., 2008), revealing VR-based virtual worlds' differing degrees of resemblance to reality (Thurman and Mattoon, 1994). We posit:

> P1b: *VR's virtual world formats include VR-based gamification, VR video, VR-based shopping, and VR-based events, which can exhibit differing degrees of resemblance to reality.*

2.3.3 VR content features

VR content features describe the organization of "information, …words, images, graphics, activities, etc. that tell the brand's story…to capture or maintain the target audience's attention" (Holliman and Rowley, 2014, p. 271). We identify the VR narrative and graphics as key VR content features, given their importance in shaping VR engagement and experience (Hollebeek and Macky, 2019; Slobounov et al., 2006).

VR narrative comprises a sequence of goal-directed events that tells the brand's story to desirably affect consumer responses (e.g. fostering purchase; Escalas, 1998). Narratives contain three main elements (Dessart and Pitardi, 2019). First, the *plot* denotes the temporal event sequence a character experiences that results from story-based chronology and causality (Van Laer et al., 2014). Differing narrative appeals can be used (Johar and Sirgy, 1991), including functional (e.g. serious training games teaching construction workers how to stay safe) or experiential (e.g. *TopShop*'s Catwalk VR) appeals.

Second, *characters* are the means by which consumers experience the VR story, which can be based on real individuals or purely fictitious (Stern, 1994). Third, *verisimilitude* reflects the likelihood of story elements' actual occurrence in the consumer's own life (Bruner, 1990). Here, the virtual world's rising resemblance to the user's own environment is conducive to heightened verisimilitude (Thurman and Mattoon, 1994). Collectively, these elements help engross consumers and transport them mentally to an alternate reality where they, represented by avatars, can undertake activities outside the realm of possibility in their daily lives.

VR graphics are computer images used to inform, illustrate, or entertain VR users (Heller and Chwast, 2011). While these pictorial representations can be still (e.g. photographs), they are typically in motion in marketing applications (Rogers and Adams, 1989). They can be used to enhance VR's attractiveness (Abdullah et al., 2016), thereby affecting consumer engagement (Dessart and Pitardi, 2019). Graphics quality thus is vital in shaping consumers' VR interactions. We posit:

P1c: *Key VR content features include the VR narrative and graphics.*

3. Conceptual framework

Extending Voorhees et al. (2017), we next develop a framework that outlines the unfolding of the consumer experience through the *pre-*, *intra-*, and *post*-VR interaction stages of their journey (Figure 1). We identify consumer VR readiness as a key driver of their VR-based interactivity (Parasuraman, 2001), which is shaped by the Technology Acceptance Model (TAM)'s perceived VR usefulness and ease-of-use (Lin et al., 2007; Davis, 1989). In addition, consumer meaning-making motives appear as core drivers at the customer journey's *pre*-VR experience stage (Frankl, 2011; Malhotra et al., 2015), which in turn incite consumer engagement at the *intra*-VR experience stage (Hollebeek and Rather, 2019).

On completing their VR interactions, users enter the *post*-VR interaction stage of their journey, where these interactions shape consumer-perceived brand relationship quality. Our temporally-tiered journey perspective thus comprises consumers' *pre*-VR interaction drivers, which we expect to affect engagement at their journey's *intra*-VR stage. Subsequently, engagement affects *post*-VR interaction brand relationship quality (Fournier, 1998). We detail the framework below (key definitions are presented in Table 3).

Table 3 about here

3.1 Pre- to intra-VR experience stage

Effect of VR readiness and meaning-making motives on engagement. Consumer VR readiness is an important driver of VR interactions (Figure 1). Adapting Parasuraman's *technology readiness* (2000, p. 308) to the VR context, we propose *VR readiness* as "a consumer's propensity to embrace and use [marketing-based VR applications] to accomplish their goals," akin to TAM's *behavioral intention* (McLean and Wilson, 2019; Davis, 1989; King and He, 2006). This propensity forms through a VR-based marketing application's TAM-informed consumer-perceived usefulness and ease-of-use (Schepers and Wetzels, 2007; Bruner and Kumar, 2005), with higher levels of these elevating readiness (Manis and Choi, 2019). High similarity thus exists between TAM and Parasuraman's (2001) technology readiness (Lin et al., 2007).

The more VR-ready a consumer, the greater his/her VR-related skill and positive attitude (Parasuraman, 2000, p. 309), akin to Davis et al.'s (1989) *attitude toward using technology*. *Pre*-interaction VR readiness affects cognitive, emotional, behavioral, and social *intra*-experience VR engagement (Prentice et al., 2019; Eisenbeiss, et al. 2012; Kandaurova and Lee, 2018; Figure 1). We posit:

P2a: *Consumer VR readiness is a key driver of VR engagement.*

Understanding motive's effect on VR engagement. Continuing at the customer journey's *pre*-VR experience stage, we next discuss the role of consumers' meaning-making motives in shaping VR engagement. First, the understanding motive reflects the user's desire to grasp salient issues, learn new information, or be informed through marketing-based VR (Frankl, 2011; Postman and Weingartner, 1969; Itani et al., 2019). The framework suggests the understanding motive to affect cognitive VR engagement, or the consumer's level of VR-related thought-processing and mental elaboration (Hollebeek et al., 2014). High engagement yields *immersion* that at its top end transitions to flow (Csikszentmihalyi, 1990), as shown in Figure 1 (also see section 2.1).

The understanding motive also affects behavioral VR engagement, which denotes the consumer's energy, effort, and time spent interacting with marketing-based VR applications (Harrigan et al., 2018; Algharabat et al., 2019). Typically, the desire to understand (e.g. complex brand information) sees consumers spend more time on marketing-based VR, raising their behavioral engagement. We propose:

P2b: *Consumers*' *understanding motive directly impacts their cognitive and behavioral VR engagement*.

Any VR archetype/format can be used to elicit users' understanding motive. Likewise, VR content features can be designed to satisfy this motive (e.g. informative narratives), lifting engagement (Dessart and Pitardi, 2019). The employed VR archetype, format, and content features thus moderate the association between consumer VR readiness and meaning-making motives. That is, their relationship is contingent on the VR archetype, format, and content features used. Moreover, the latter moderate the association between consumers' meaning-making motives and their *intra*-VR experience-based (*intra*-interaction) engagement, as shown by the downward-pointing, dashed arrows (Figure 1). We postulate:

P2c: *The deployed VR archetype, format, and content features moderate the association between consumers*' *(a) VR readiness and meaning-making motives, and (b) meaning-making motives and VR engagement.*

Experience motive's effect on VR engagement. The experience motive reflects consumers' desire for VR-derived experiential gratification, including escapism (e.g. venturing into an alternate reality), entertainment, aspirational desires (e.g. by 'being' one's favorite avatar), or control (e.g. by directing virtual actions). In Figure 1, the experience motive affects emotional VR engagement, or the consumer's brand-related affect in their VR interactions (Harrigan et al., 2018). Emotionally engaged consumers are passionate about the VR stimulus, develop meaning from it, and invest extensively in their marketing-based VR interactions (Kumar et al., 2019; Sprott et al., 2009).

The experience motive also affects behavioral engagement, which manifests through the consumer's time, effort, and energy expended on marketing-based VR applications (e.g. attending VR-based events; Bento et al., 2018). Third, the framework links the experience motive and consumers' social VR engagement, reflecting consumers' VR-derived social (e.g. VR-based *social shopping*-based) experience. We suggest:

P2d: *Consumers*' *experience motive directly impacts their emotional, behavioral, and social VR engagement*.

Acting motive's effect on VR engagement. The acting motive reflects consumers' desire to do things through/in VR (e.g. comparing products in VR-based shopping; Villani et al., 2012). In the framework, consumers' acting motive affects their behavioral VR engagement, or their time, energy, and effort spent interacting with marketing-based VR (Hollebeek et al., 2014). A positive association is expected between consumers' behavioral desire and their actions (Sheppard et al., 1988; Bruner and Kumar, 2005). The framework also relates the acting motive and social VR engagement, suggesting that consumers' social

motives drive their (e.g. *social sharing*-based) social activity in marketing-based VR applications (Bonasio, 2017). We propose:

P2e: *Consumers*' *acting motive directly impacts their behavioral and social VR engagement*.

Socializing motive's effect on VR engagement. The socializing motive reflects consumers' desire for VR-based social gratification, including by interacting with/playing against others (Frankl, 2011; Högberg et al., 2019). In Figure 1, the socializing motive affects consumers' social and behavioral VR engagement. First, it can shape behavioral engagement, including when one's marketing-based VR actions are affected by social status (Shen, 2012). Second, the desire to socialize through VR yields corresponding socially-oriented consumer actions (e.g. joining VR communities), thereby impacting behavioral engagement (Hollebeek et al., 2017). We theorize:

P2f: *Consumers*' *socializing motive directly impacts their social and behavioral VR engagement*.

The framework suggests that *sensory feedback* (SF) affects all VR engagement dimensions. Thus, by tracking user engagement (e.g. via neuro-tracking), SF offers customized responses to consumers' engagement in marketing-based VR applications. Given its personalized nature, we view SF to (a) strengthen *intra*-interaction VR engagement (e.g. by raising cognitive processing), and (b) stretch the consumer's engaged timespan (e.g. by keeping their interest for longer). We postulate:

P2g: *Sensory feedback reinforces and elongates consumers*' *cognitive, emotional, behavioral, and social VR engagement*.

3.2 Intra- to post-VR experience stage

As consumers move through the *intra-* to *post*-VR experience stage of their journey, their perceived brand relationship quality (BRQ) develops (Barnes, 2016; Figure 1). Below, we outline VR engagement's effects on BRQ, which comprises brand-partner quality, commitment, self-connection, intimacy, and love/passion (Fournier, 1998; Thorbjornsen et al., 2002).

Cognitive VR engagement's effect on BRQ. Cognitive VR engagement, which reflects the consumer's VR-related thought processing and mental elaboration, chiefly influences the BRQ dimensions of brand-partner quality and commitment (Figure 1). First, *brand-partner quality* reflects the consumer's evaluation of a brand partner's performance (Fournier, 1998), which marketing-based VR is designed to facilitate. However, negatively-perceived VR can detract from the brand relationship (Hollebeek and Chen, 2014).

Cognitive VR engagement also affects customer *commitment*, or the consumer's valuing of an ongoing brand relationship so as to warrant maximum efforts at maintaining it (Morgan and Hunt, 1994). Given its rational nature, cognitive VR engagement chiefly influences (a) calculative commitment, which arises from perceived rewards or high switching-costs (Randall and O'Driscoll, 1997), and (b) normative commitment, a consumer-perceived obligation to remain with the brand (Allen and Meyer, 1990; Cater and Zabkar, 2009). We deduce:

P2h: *Consumers*' *cognitive VR engagement directly impacts the brand-partner quality and calculative/normative commitment facets of brand relationship quality.*

Emotional VR engagement's effect on BRQ. Emotional engagement is the level of brand-related affect exhibited in VR interactions (Hollebeek, 2019). Emotionally-engaged consumers enjoy interacting with VR, have fun, and identify with the brand (Calder et al., 2018, 2009). In the framework, emotional VR engagement affects Fournier's (1998) BRQ

facets of commitment, self-connection, intimacy, and passion/love. First, emotional engagement drives *affective commitment*, or the consumer's attachment to or identification with the brand/firm (Allen and Meyer, 1990). Here, the consumer's positive *intra*-VR experience affect thus influences their broader brand sentiment.

Emotional engagement also drives *self-connection*, or the degree to which the brand connects to the consumer's identity through marketing-based VR (Fournier, 1998; Harrigan et al., 2018). Typically, consumers' rising emotional VR engagement yields heightened self-brand connection (Hollebeek et al., 2014). Third, emotional VR engagement affects *intimacy*, or the depth of the consumer/brand bond (Thorbjornsen et al., 2002). Here, higher emotional VR engagement is conducive to brand intimacy's development.

Moreover, Figure 1 shows emotional VR engagement's impact on BRQ's tenet of *love/passion*, which implies strong brand-related affect, confidence, and anticipated separation distress (Batra et al., 2012). Through repeated VR interactions, consumers feel stronger about the brand, raising their brand love. We posit:

P2i: *Consumers*' *emotional VR engagement directly affects the affective commitment, self-connection, intimacy, and love/passion facets of brand relationship quality.*

Behavioral VR engagement's effect on BRQ. Behavioral VR engagement, which reflects the consumer's level of energy, effort, and time spent interacting with marketing-based VR applications (Hollebeek et al., 2014), also affects BRQ. In the framework, behavioral VR engagement affects BRQ's commitment, self-connection, intimacy, and passion/love facets. First, by spending more time/effort on VR, consumers can experience escalating commitment, where they continue their VR interactions even under adverse (e.g. time-wasting) outcomes (Schmidt and Calantone, 2002). Second, behavioral VR engagement affects self-connection, as rising time/effort spent interacting with marketing-based VR

typically leaves consumers feeling closer to the brand (Sprott et al., 2009). Relatedly, more time/energy spent on VR (e.g. by perfecting one's *Zumba-VR* moves) imply BRQ's enhanced *intimacy* and brand *love/passion* (Thorbjornsen et al., 2002). We posit:

> P2j: *Consumers' behavioral VR engagement directly affects the commitment, self-connection, intimacy, and love/passion facets of brand relationship quality.*

Social VR engagement's effect on BRQ. Social VR engagement reflects the consumer's social investment in their VR interactions (Kumar et al., 2019), which can be directed at other users (e.g. playing against/helping them), fictitious VR characters, friends/peers (e.g. inviting them to partake in VR), or the brand itself (e.g. by offering feedback). Given social engagement's breadth, it impacts each of Fournier's (1998) BRQ facets (Figure 1). For example, higher social VR engagement is likely to foster enhanced brand love/connection (Prentice and Loureiro, 2018). These are in turn conducive to raising the consumer's evaluation of the brand as a relationship partner, thereby impacting brand commitment. Brand commitment, then, loops back to influence the consumer's *pre*-VR experience preceding their next interaction. We infer:

> P2k: *Consumers' social VR engagement directly affects the brand-partner quality, commitment, self-connection, intimacy, and love/passion facets of brand relationship quality.*

4. Discussion and implications

4.1 Theoretical implications, limitations & further research

We developed VRCJ and its archetypes, formats, and content features (P1a-c), which we mapped in a framework outlining the consumer's *pre-*, *intra-*, to *post*-marketing-based VR experience throughout their journey (P2a-k). Our analyses thus further understanding of VRCJ and its nomological network (MacInnis, 2011), thereby offering a springboard for further (e.g. empirical) research and making an important theoretical contribution.

This study also has several limitations, from which we identify further research avenues. First, while we adopt Frankl's (2011) meaning-making motives as key drivers of consumers' VR engagement, alternate perspectives may be used to complement or substitute our analyses (e.g. uses-and-gratifications; Hollebeek, Malthouse and Block, 2016). Given our conceptual approach, we also encourage the framework's empirical testing/validation. For example, using conjoint analysis, researchers could uncover the relative importance of our meaning-motives in driving VR engagement, or test the relative contribution of engagement's dimensions to Fournier's (1998) BRQ facets across contexts (e.g. differing consumer segments/brands). We also recommend testing the nature and strength of the framework's associations across differing VR archetype, format, and content feature combinations.

Second, little is known regarding marketing-based VR's optimal design and implementation. Therefore, which VR archetypes, formats, and content features optimize brand/firm performance? Moreover, how do ethical marketers accurately represent their VR-based offerings to minimize *post*-purchase dissonance across VR platforms/archetypes, after consumer expectations were (perhaps unrealistically) raised through marketing-based VR (Andreatta et al., 2010)? Is there a risk that some consumers might prefer interacting with VR as a *pre*-purchase (e.g. promotional) tool *only*, without making a purchase?

Third, while rising VR engagement is conducive to BRQ's development, at elevated levels it can incur adverse effects (e.g. customer fatigue/draining, spatial or temporal distortion, boredom, addictive behavior; Sulea et al., 2015). We thus propose the existence of an optimal VR engagement level up to which increasingly favorable returns accrue to marketers, but beyond which decreasing returns set in (Schaufeli et al., 2002; Hammedi et al., 2019; Hollebeek, 2011). Correspondingly, we expect that *managed high* - but not excessive - VR engagement will optimize BRQ, which merits empirical testing/validation (Zhang and Bartol, 2010; Caesens et al., 2016). For example, what can firms do to minimize consumer

draining in marketing-based VR interactions (Dormann and Zapf, 2004)? How can such adverse effects be reduced by incorporating consumer resource conservation tactics (e.g. integrating low-attention/rest episodes to elongate their engaged timespan)?

4.2 Managerial implications

The following managerial implications arise from this research. First, while VR assumes consumers' requisite willingness to interact with/be immersed in computer-mediated environments, individual differences exist, as recognized in VR readiness as a key engagement driver (Figure 1, P2a). Managers thus need to identify their most VR-ready consumers and target their initial VR-based marketing efforts at this group, aiming to leverage these as opinion leaders to help convert others (Trelease, 2008).

Second, while VR engagement and BRQ can be developed through any of our VR archetypes (P1a), some interfaces are more suitable in particular contexts. For example, VR presented on autonomous VR-centric interfaces may be useful to familiarize consumers with VR (e.g. *HoloLens*-based VR trial), particularly for those interested in VR (Weinswig, 2016). However, less VR-ready consumers are better targeted through non-VR centric platforms they already own to lower their VR usage threshold (e.g. smartphone-based *Google Cardboard* applications). Relatedly, some VR archetypes may be more suited for adoption with particular VR formats. For example, to optimize new users' engagement with VR-based gamification, autonomous (non-)VR-centric platforms (e.g. *HoloLens*) are expected to be ideal, as they offer fewer distractions vis-à-vis programmatic VR.

Third, we identified the VR formats of VR-based gamification, video, shopping, and events (P1b) as suitable for achieving different marketing objectives. For example, while VR-based shopping offers a distribution channel, VR-based gamification may have prime promotional applicability. Their uses are however converging, as illustrated by their growing

hybrid of *in-game purchasing* (Han and Windsor, 2013). Managers thus need to stay abreast of VR-related trends, regularly reassess existing/potential marketing-based VR applications, and screen for and act on new opportunities.

Fourth, we identified the key content features of VR narrative and graphics (P1c), which moderate the association between consumers' *pre*-VR experience VR readiness and meaning-making motives on the one hand, and their meaning-making motives and VR engagement on the other (P2c). VR content features can cultivate engagement by engrossing users and creating utilitarian (e.g. learning) or hedonic (e.g. entertainment) value (Voss et al., 2003), thereby affecting engagement (Hollebeek, 2013). For example, the use of a narrative customized to the user's needs and/or the inclusion of high-fidelity graphics in virtual workshops can facilitate consumer learning about focal topics of interest (Ngobi, 2018). To ensure managerial accountability, specific content features' engagement-inducing capacity should be regularly gauged and monitored.

Fifth, at the *pre*-VR experience stage of the customer journey, VR archetype, format, and content features play a pivotal role in eliciting consumers' motivation to use marketing-based VR applications. For example, the use of compelling VR content features is likely to trigger their understanding motive (for utilitarian content) or experience motive (for hedonic content), thereby in turn garnering engagement (P2b-f). We advise managers to design their marketing-based VR content to align with consumers' desired meaning-making motives, which may differ across customer segments. For example, those high in need-for-cognition are likely to display an elevated understanding motive (Cacioppo et al., 1984), thus requiring highly functional, informative VR content at the *intra*-VR experience stage of their journey (Hollebeek and Srivastava, 2020).

At the *intra*-VR experience stage, it is important to stimulate two-way consumer/brand or -firm interactions (Hollebeek et al., 2014). For example, highly

personalized interactions tailored the user's specific needs or interactive (e.g. social media-based) user platforms can be deployed to leverage consumer engagement (Hollebeek et al., 2019a). At the *post*-VR experience stage of the customer journey, managers should aim for elevated BRQ levels (P2h-k), which are conducive to prompting the user's future *pre*- and *intra*-VR experience cycle. Sample ways to achieve this include the adoption of authentic, relevant, personalizable VR tools that touch the heart of customers (Hollebeek and Macky, 2019), thereby instilling consumers' desire to continue interacting with marketing-based VR applications (Ngobi, 2018; Frankl, 2011; Davis, 1989).

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Figure 1: Conceptual framework

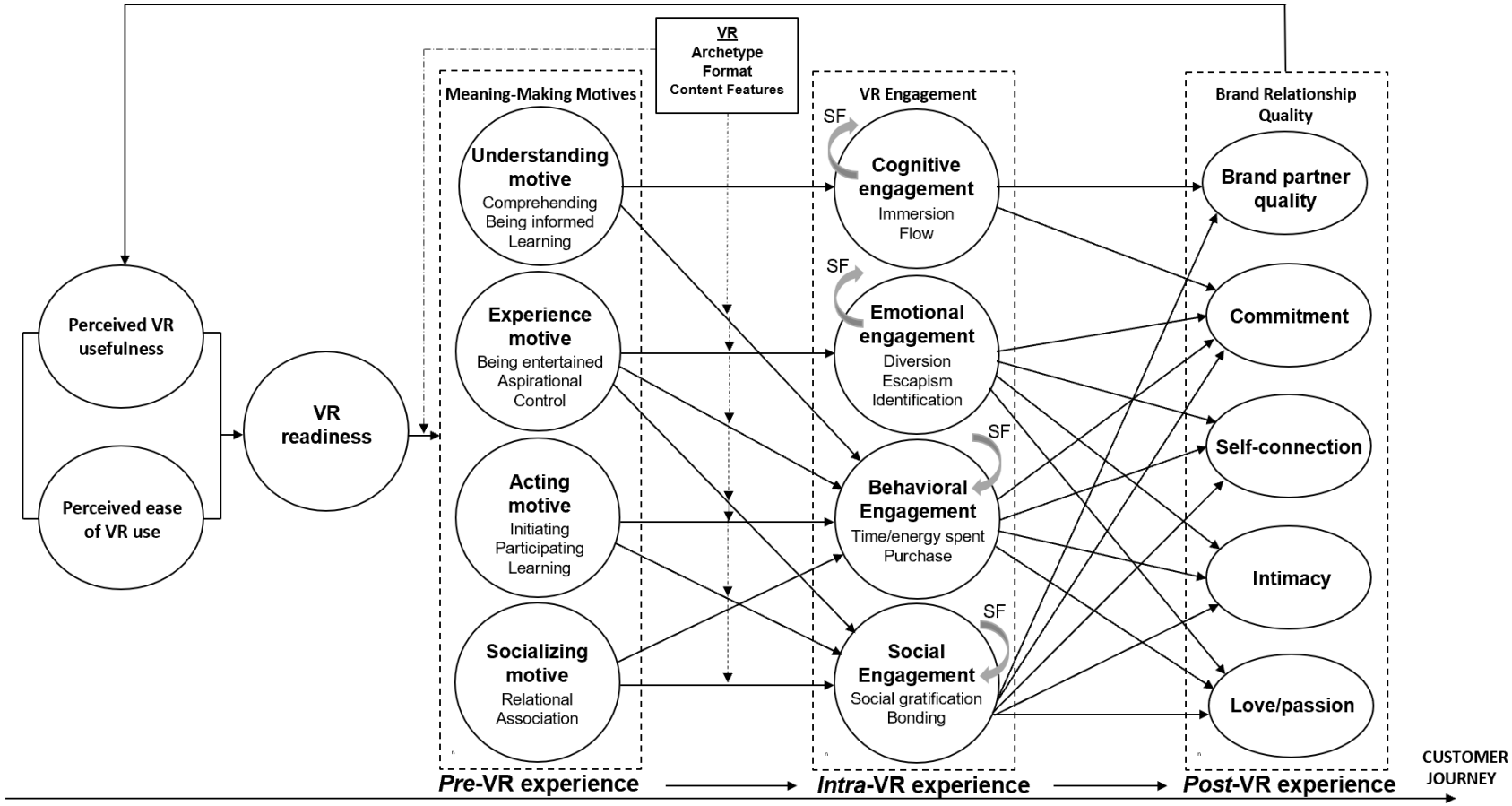

Table 1: VR conceptualizations

Author(s)	Source Type	VR definition	Perspective
Merriam-Webster (2018)	Dictionary	"An artificial environment, which is experienced through sensory stimuli (such as sights and sounds) provided by a computer and in which one's actions partially determine what happens in the environment."	VR as object/application
Cowan & Ketron (2018, p. 1)	Academic	"The application of three-dimensional computer technology to generate a virtual environment within which users navigate and interact."	VR as an object/application
PwC (2018, p. 2)	Consultancy	"A completely immersive virtual and aural world that a user experiences, usually through a head-mounted display."	VR as object/application
Techopedia (2018)	Practitioner	"Computer-generated environments or realities that are designed to simulate a person's physical presence in a specific environment that is designed to feel real."	VR as object/application
Meißner et al. (2017, p. 2)	Academic	"A simulated environment in which the perceiver experiences telepresence, which is the extent to which a person feels present in a virtual environment."	VR as object/application
Sanderink & Boon (2017, p. 4)	Practitioner	"VR is about simulating a reality based on 3D-models within a computer."	VR as an application
Berg & Vance (2016, p. 1)	Academic	An immersive computing technology (ICT) that incorporates "a set of technologies that enable people to immersively experience a world beyond reality."	VR as object
Goldman Sachs (2016, p. 10)	Consultancy	"Immerses a user in an imagined or replicated world (e.g. video games, movies, or flight simulation) or simulates presence in the virtual world."	VR as object/application
KPMG (2016, p. 4)	Consultancy	"The computer-generated simulation of a three-dimensional image or environment that can be interacted with in a seemingly real or physical way by a person using special electronic equipment (e.g. a helmet with a screen inside, or gloves fitted with sensors)."	VR as object/application
Isaac (2016)	Practitioner	"A computer technology that replicates an environment, real or imagined, and simulates a user's physical presence and environment in a way that allows the user to interact with it."	VR as object/application
Bigné et al. (2016, p. 1424)	Academic	"[The] virtual environment [used] was a high-quality 3D simulation of a supermarket aisle projected into a cave automated virtual environment… an immersive reality room with three walls and a floor capable of displaying stereo images."	VR as a method
Fox et al. (2009, p. 95)	Academic	"[When] a user's movements are tracked and his or her surroundings rendered, or digitally composed and displayed to the senses, in accordance with those movements… Substitut[ing] our physical environment and our sensory experiences - what we understand as reality - with digital creations."	VR as object/application
Craig et al. (2009)	Academic	"A computer simulation that creates an image of a world that appears to our senses in much the same way we perceive the real world, or 'physical' reality" (p. 1). "A medium composed of interactive computer simulations that sense the participant's position and actions, providing synthetic feedback to one or more senses, giving the feeling of being immerse or bring present in the simulation" (pp. 4-5).	VR as object/application
Whyte (2002, p. 3)	Academic	"Describe[s] applications in which we can interact with spatial data in real-time." It is a buzzword around which communities of industrial users, suppliers, governments, funding bodies and academics have gathered.	VR as object/application
Brooks (1999, p. 16)	Academic	An encounter in which "the user is effectively immersed in a responsive virtual world."	VR as object

Holbrook & Kuwahara (1999)	Academic	"The ability to present marketing-related materials effectively to consumers and [the] ability to capture the visual aspects of consumption experiences engaged in by consumers" (p. 244). [It includes] presentations suitable for head-mounted LED, LCD, CRT, or TV displays" (p. 241).	VR as object/application
Blach et al. (1998, p. 167)	Academic	"Multimodal interaction with dynamic and responsive computer generated or so-called virtual environments."	VR as object/application
Briggs (1996, p. 13)	Academic	"A three-dimensional, computer-generated simulation in which one can navigate around, interact with and be immersed in another environment."	VR as object/application
Steuer (1993, p. 3)	Academic	"VR is typically defined in terms of technological hardware."	VR as application
Wexelblat (1993)	Academic	"A computer-generated, interactive, 3D environment in which people become immersed."	VR as object/ application
Coates (1992)	Academic	"Electronic simulations of environments experienced via head-mounted eye goggles and wired clothing, enabling the end user to interact in realistic three-dimensional situations."	VR as application
Greenbaum (1992, p. 58)	Academic	"An alternate world filled with computer-generated images that respond to human movements. These simulated environments are usually visited with the aid of an expensive data suit, which features stereophonic video goggles and fiber-optic data gloves."	VR as application
Lanier (1992)	Academic	"A digitally created space that humans could access by donning sophisticated computer equipment" (Rheingold 1991; Sutherland 1968; Fox et al. 2009).	VR as application
Krueger (1991, p. xiii)	Academic	"Three-dimensional realities implemented with stereo viewing goggles and reality gloves."	VR as application

Table 2: VR archetypes

	AUTONOMOUS VR (VR hardware)	**PROGRAMMATIC VR** (VR software)
VR-CENTRIC VR (Center on VR functionality)	**Autonomous VR-centric VR** (e.g. *Microsoft*'s *HoloLens*)	**Programmatic VR-centric VR** (e.g. VR social media/apps, such as *Orbulus*, *Jaunt VR*, *vTime*)
NON-VR CENTRIC VR (VR functionality exists alongside the device's other major functions)	**Autonomous non-VR centric VR** (e.g. service robots/desktop computers used in marketing-based VR applications)	**Programmatic non-VR centric VR** (e.g. *Facebook*'s *Virtual Selfie Stick*)

Table 3: VRCJ framework - Concepts and propositions

Concept	Definition/description	Propositions
VR archetypes	Describe the nature of the VR interface that enables users to communicate with a computer (Mulder et al., 1992).	• **P1a:** VR-based virtual world-hosting archetypes comprise autonomous VR-centric, autonomous non-VR centric, programmatic VR-centric, and programmatic non-VR centric tools.
VR formats	Categorize the VR-based virtual world's presentation mode and strategic purpose.	• **P1b:** VR's virtual world formats include VR-based gamification, VR video, VR-based shopping, and VR-based events, which can exhibit differing degrees of resemblance to reality.
VR content features	Describe the organization of information, [objectives], words, images, graphics, activities, etc. that tell the brand's story…to capture or maintain the target audience's attention (Holliman & Rowley, 2014, p. 271).	• **P1c:** Key VR content features include the VR narrative and graphics.
VR experience through the customer journey		
Trans-customer journey VR experience	*Pre-*, *intra,* and *post*-VR experience: Occur prior to, during, and after VR interactions, respectively.	
***Pre*-to *intra*-VR experience**		
VR readiness	A consumer's propensity to embrace and use VR to accomplish their goals (Parasuraman, 2000, p. 308).	• **P2a:** Consumer VR readiness is a key driver of VR engagement.
Meaning-making motives	• *Understanding motive*: A consumer's desire to grasp issues, learn new information, or be informed through marketing-based VR (Frankl 2011; Postman & Weingartner, 1969). • *Experience motive*: A consumers' desire for marketing-based VR experiential gratification (e.g. through escapism, diversion, entertainment (Frankl, 1985; Voss et al., 2003). • *Acting motive*: A consumer's desire to do specific things through/in marketing-based VR (Villani et al., 2012; Craig & Sherman, 2009). • *Socializing motive*: A consumer's desire for social gratification through VR (e.g. by interacting with or playing against others; Frankl, 2011).	• **P2b:** Consumers' understanding motive directly impacts their cognitive and behavioral VR engagement. • **P2c:** The deployed VR archetype, format, and content features moderate the association between consumers' (a) VR readiness and meaning-making motives, and (b) meaning-making motives and VR engagement. • **P2d:** Consumers' experience motive directly impacts their emotional, behavioral, and social VR engagement. • **P2e:** Consumers' acting motive directly impacts their behavioral and social VR engagement. • **P2f:** Consumers' socializing motive directly impacts their social and behavioral VR engagement.
VR engagement	• *Cognitive VR engagement*: A consumer's level of VR-related thought processing & mental elaboration in their VR interactions (Hollebeek et al., 2014; Harrigan et al., 2018). • *Emotional VR engagement*: A consumer's level of brand-related affect exhibited in their VR interactions. • *Behavioral VR engagement*: A consumer's level of energy, effort & time spent on their VR interactions.	

	• *Social VR engagement*: A consumer's social investment in their VR interactions (Brodie et al., 2013).	
Sensory feedback (SF)	How an environment presents information to the user's senses (Sutcliffe, 2003; Cowan & Ketron, 2018).	• **P2g:** Sensory feedback reinforces and elongates consumers' cognitive, emotional, behavioral, and social VR engagement.
***Intra-to post*-VR experience**		
Brand relationship quality	The consumer's perceived quality of his/her relationship with a specific brand (as gauged through e.g. perceived meaningful consumer/brand actions; Fournier, 1998, p. 365).	• **P2h:** Consumers' cognitive VR engagement directly impacts the brand-partner quality and calculative/normative commitment facets of brand relationship quality. • **P2i:** Consumers' emotional VR engagement directly affects the affective commitment, self-connection, intimacy, and love/passion facets of brand relationship quality. • **P2j:** Consumers' behavioral VR engagement directly affects the commitment, self-connection, intimacy, and love/passion facets of brand relationship quality. • **P2k:** Consumers' social VR engagement directly affects the brand-partner quality, commitment, self-connection, intimacy, and love/passion facets of brand relationship quality.