

The Systemic Creation of Value Through Circulation in Collaborative Consumer Networks

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Extant research tends to adopt a community perspective when examining value creation in consumer collectives that limits the understanding of how value is created in loosely organized, dynamic, and heterogeneous networks. This study expands research on value creation by adopting a circulation-centric perspective that explains how value is created systemically in collaborative consumer networks. Inspired by anthropological theories of value creation, this study examines how circulation enables the systemic creation of value by connecting networked participants, their actions, objects, and value outcomes. Ethnographic and netnographic data were collected on the collaborative network of geocaching, in which consumers promote the circulation of objects known as travel bugs. The systemic creation of value in collaborative consumer networks is composed of four subprocesses triggered by object circulation—enactment, transvaluation, assessment, and alignment—that may happen concurrently and in multiple iterations. This process explains how geographic dispersion can coexist with the cultural situatedness of value creation and helps integrate prior research on value creation and value outcomes through the development of a systemic framework that explains value creation in terms of both individual actions and collective outcomes. Moreover, the findings motivate discussion on the affordances of physical and digital objects for value creation.

Keywords: value creation, collaborative networks, circulation, value outcomes

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Consumer researchers have a long history of examining value, that is, the perceived benefit of something (e.g., object, person, or activity) to an individual or group (Babin, Griffin, and Babin 1994; Chen 2009; Cova 1997; Holbrook 1999; Sheth, Newman, and Gross 1991; Zeithaml 1988). Whereas initial research detailed and explained the different value outcomes that emerge from the interaction with products and services (Babin et al. 1994; Chen 2009; Holbrook 1999; Sheth et al. 1991; Zeithaml 1988), more recent approaches have focused on value created outside direct interactions with providers of goods or services in the context of brand and consumption communities (Cova 1997; Cova and Pace 2006; Hartmann, Wiertz, and Arnould 2015; Muñoz and O'Guinn 2001; Pongsakornrunsilp and Schroeder 2011; Schau, Muñoz, and Arnold 2009; Thompson and Troester 2002). Despite advances, current approaches to value creation have not yet explained how value is created in loosely organized,

dynamic, and heterogeneous collectives such as collaborative consumer networks. In such networks, participants scattered over geographic space connect asynchronously with one another, using “their senses to determine how and when to respond or act” in a dynamic and self-adjusting way (Vargo and Lusch 2011, 185), which grants value creation a systemic character in these collaborative networks. That is, in collaborative consumer networks, the process of value creation must integrate disparate and disperse actions enacted by individual consumers in order to produce outcomes at the collective level. However, it is still unclear how value is created systemically in such networks.

Understanding such a systemic process of value creation has become more pressing with the popularization of peer-to-peer (P2P) networks (Giesler 2006; Mathwick, Wiertz, and de Ruyter 2008), the so-called sharing economy (Botsman and Rogers 2010), and the emergence of platform-enabled consumer ecosystems, dubbed “platform capitalism” (Choudary, Alstynne, and Parker 2016; Mozorov 2015; Olma 2014). These increasingly relevant network forms also have been called “systems of collaborative consumption” (Botsman and Rogers 2010) because they are characterized by complex interactions among interdependent participants who collaborate to achieve social and economic goals (Jenkins, Ford, and Green 2013; Thomas, Price, and Schau 2013). In fact, the aggregation of participants’ efforts to achieve common or compatible goals is one of the key features of collaborative consumer networks (Scaraboto 2015). In such networks, the multiple unplanned, nonlinear, and haphazard actions of individual networked participants are dynamically integrated (Benkler 2006). Some notable cases of collaborative consumer networks, such as Couchsurfing (www.couchsurfing.com), Airbnb (www.airbnb.com), and HitRecord (www.hitrecord.com), have attracted the attention of consumer researchers (Cova and White 2010). But extant perspectives developed to explain value creation in consumer collectives are not sufficient to make sense of value creation in collaborative networks because these perspectives overlook the integrative nature of systemic value creation.

Inspired by anthropological theories of value creation (Graeber 2001; Lambek 2013; Munn 1986; Otto and Willerslev 2013a, 2013b), this study examines the role of object circulation in systemically creating value. Object circulation refers to the recurrent transfer of objects in a collective. A focus on circulation brings attention to the role of objects in fostering interdependencies that occur as objects are transferred from one participant to another in a collective. Anthropological research on value provides important insights into the role of circulation in promoting a systemic process of value creation. This study compiles and updates these insights and applies them to collaborative consumer networks that have characteristics not yet discussed by the anthropological literature on value, such as geographic dispersion, computer mediation, and

unplanned or haphazard performances of value-creating actions.

To further develop and answer the question of how circulation creates value systemically in collaborative consumer networks, this study employs ethnographic and netnographic data on the collaborative consumer network of geocaching (www.geocaching.com), an outdoor treasure-hunting game facilitated by an online platform. The traceability of objects circulating in this network makes it the ideal context for examining the systemic creation of value in collaborative networks. We follow the circulation of physical and digital objects among consumers in this network to understand how value-creating actions are integrated and value outcomes distributed to its participants.

The key contribution of this study is to develop a framework that explains the systemic creation of value in collaborative consumer networks. We detail how the myriad of actions undertaken individually by networked consumers are integrated through circulation to create value outcomes for participants in the network. The process we describe is distributed in nature (i.e., it involves the efforts of multiple networked participants) and is composed of four subprocesses (enactment, transvaluation, assessment, and alignment) that unfold through time and space and generate various forms of value (potential, indexical, value outcomes, and microcultural values). This circulation-centric framework for value creation contributes to consumer research by accounting for the interdependencies among networked participants and their actions, explaining how value-creating actions are interconnected and how actions and objects constitute value outcomes. The framework’s focus on object circulation invites discussion on the role of the circulation of physical and digital objects in value creation. In particular, the subprocess of transvaluation, in which value-creating actions are materialized as indexical value in circulating objects, prompts discussion on the role of materiality in the systemic creation of value. Finally, the circulation-centric framework for value creation accomplishes two integrations of consumer literatures: first, it connects the literature on consumer-based value creation at the individual level (Chen 2009; Zeithaml 1988) with that at the collective sociocultural level (Arnould 2014; Arsel and Bean 2013; Hartmann et al. 2015; Karababa and Kjeldgaard 2014; Schau et al. 2009). Second, it connects the literature on value outcomes (Babin et al. 1994; Cova 1997; Venkatesh and Peñaloza 2014) with the literature on value creation (Schau et al. 2009; Vargo and Lusch 2011), allowing researchers to think of value as both an outcome and as a process. This integration has been acknowledged as critical for advancing research on value (Gummerus 2013).

Before describing our research work and detailing the process through which value is created systemically, we explain how the rise of collaborative networks has created

the need to understand how value is created systemically. We explain how current perspectives on value creation in consumer collectives cannot fully account for the integrative process that happens in systemic value creation. We then explain how a focus on object circulation can help address this gap.

COLLABORATIVE NETWORKS AND THE SYSTEMIC NATURE OF VALUE CREATION

A collaborative consumer network consists of a group of consumers that are largely autonomous, often geographically distributed, and heterogeneous in terms of their setting, culture, social capital, and goals, but that collaborate to better achieve common or compatible goals and whose interactions are supported by computer networks. Participants of collaborative networks often switch between the roles of consumer and producer as they engage in social and economic activities directed toward value creation (Scaraboto 2015). The Internet's rapid evolution has created the conditions for collaborative networks to evolve and expand, becoming a key organizational model of the 21st century often associated with the ideals of the sharing economy and with the development of platform capitalism. Computer-mediated communication allows participants scattered over geographic space to connect asynchronously in an often unplanned, nonlinear, and haphazard manner. Although these consumer–producer collectives may vary in terms of the amount of control exercised by corporations over consumer interaction on a platform (Uber and Airbnb are examples of networks on the most controlled side and file-sharing P2P networks of the least controlled one), they all share the defining characteristics of collaborative consumer networks.

It is important to note the difference between the concepts of consumer networks and consumption communities because the latter appears frequently in the consumer research literature and may generate confusion. Both communities and networks may be used to define consumer collectives, and these two concepts can even coexist. However, they express different aspects of a consumer collective: “community emphasizes identity and network emphasizes connectivity” (Wenger 2010, 10). Thus studies of consumer communities (Muñiz and O’Guinn 2001; Schouten and McAlexander 1995) emphasize aspects linked to shared identity, shared consciousness, rituals and traditions, common social practices, a sense of belonging to an in-group, and a sense of obligation to the community and its members. According to this perspective, any action that reinforces these communal aspects (Schau et al. 2009) or leads a heterogeneous collective toward “a strong sense of collective belonging” (Thomas et al. 2013, 1026) has the potential to create value in these communities. In

contrast, a focus on networks highlights the interconnectivity among individual participants of these networks and the relationships of interdependence that are created among them.

With the advent of computer-mediated systems, globally spread networks of consumers have emerged without necessarily developing strong communal bonds (Giesler 2006; Mathwick et al. 2008). In collaborative consumer networks, participants depend on each other to access resources to achieve their goals, but their relationships are not necessarily based on developing a shared identity, even though some of them may develop it as a result of their interactions. Recent consumer research has explored the interaction between these two aspects showing that when participants in a consumer network depend on each other for social and economic resources (Jenkins et al. 2013), they may be motivated to create and maintain a sense of community by engaging in alignment practices that attempt to overcome the tensions related to their heterogeneity (Thomas et al. 2013). Thus a sense of communal identity may emerge from the alignment efforts of networked individuals, but this is not always the case. Hence to consider value creation in consumer collaborative networks, it is important to move beyond the communal aspects that may or may not be present in these networks, and focus on the connections and interdependencies that exist among networked consumers.

To speak of connections and interdependencies among participants and their relation to a whole is to speak of networks as systems (Vargo and Lusch 2011). Systems connect phenomena happening at both the individual and collective level (Giesler 2006; Mathwick et al. 2008) and allow us “to see more clearly how a single, specific actor . . . can participate more effectively” in a network (Vargo and Lusch 2011, 182). Systems encompass “more than just an aggregate of dyadic exchanges” (Giesler 2006, 283) to include “dynamic webs of actors” (Akaka, Vargo, and Lusch 2012, 15). Thus a systemic process of value creation is one that considers “the aggregate efforts of interdependent participants” (Scaraboto 2015, 153) and accounts for how these participants “integrate and exchange resources to co-create value for themselves and for others” (Akaka et al. 2012, 15).

Consumer research adopting a practice-theory perspective has alluded to the systemic nature of value creation in consumer collectives. Holt (1995) introduced the idea of practices as a mechanism for value creation in consumer collectives, and Schau et al. (2009) further developed it, identifying 12 key practices (routinized actions) involved in the creation and maintenance of brand communities and affirming that “[v]alue is manifest in the collective enactment of practices” (41). Schau et al. (2009) take a community (rather than a network) perspective on value creation, which leads them to equate value creation with community building. These authors note that, by providing

opportunities for members to demonstrate competencies in community building, “practices allow members to accrue cultural capital through adroit performance, which creates value for the consumer” (Schau et al. 2009, 40). In addition, the practice-theory approach to value creation adopted by Holt (1995) and Schau et al. (2009), like most research adopting a community perspective (Cova and Cova 2002; Hoffman and Novak 1996; Muñiz and O’Guinn 2001; Schau et al. 2009), glosses over the aggregative efforts that characterize and shape collaborative consumer networks (Benkler 2006; Kozinets 2015; Scaraboto 2015; Thomas et al. 2013). In practice theory, consumers collaborate in value creation to the extent that they are participating in certain practices. While true, this view fails to explain how unintentional, haphazard, and onetime actions of multiple kinds performed independently by individual consumers contribute to the systemic nature of value creation. If collaborative networks create value for participants “through emergent participatory actions of multiple kinds” (Schau et al. 2009, 30), then a systemic process of value creation in these networks needs to account for how the multiple emergent value-creating actions of individual networked participants are integrated to create value outcomes. Interestingly, both Holt (1995) and Schau et al. (2009) have identified a need for a more systemic view on practices. Schau et al. (2009) argue that practices can “be combined in complex ways [. . . and] the effects of interactions are at minimum addictive and potentially exponential” (35). Yet even though practice-based studies have brought researchers’ attention to consumer actions as the source of value creation in consumer collectives, they lack a truly systemic explanation for how consumers’ individual efforts are interconnected and how enactments of these efforts become integrated into value outcomes. As noted by Arsel and Bean (2013), “While Schau et al. (2009) visually represent the interaction of practices with a gear metaphor and make reference to the way practices related to brand community ‘are bundled’ (32), they do not formally theorize the nature of this relationship” (39).

Inspired by anthropological work in value creation (Graeber 2001; Malinowski 1922; Munn 1986), we argue that a focus on circulation can shed light on the process of systemic value creation because it considers the role of objects in connecting the actions of individual networked participants that result in value outcomes created collectively. The next section details object circulation and its role in the systemic creation of value.

OBJECT CIRCULATION AND THE SYSTEMIC CREATION OF VALUE

Research in anthropology consistently has shown the importance of object circulation in fostering and maintaining interdependencies among participants of a collective. One

of the earliest and most relevant theories of object circulation is Malinowski’s ethnography of the Kula system in the Trobriand Islands, off the east coast of New Guinea, in Melanesia. Malinowski described the Kula as “a series of . . . periodic overseas expeditions, which link together the various island groups and annually bring over big quantities of . . . trade from one district to another. The trade is used and used up, but the *vaygu’a*—the armshells and the necklets—go round and round the ring” (Malinowski 1922, 103). Although the Kula is often described as a system of exchange, it also can be seen as two superimposed systems of circulation. Armshells circulate from group to group in one direction along the Kula ring, and necklaces circulate through the same groups but in the opposite direction. One system of circulation is tied to the other system because necklaces are exchanged for armshells. In the Kula, exchange links the two systems, but a series of other social practices guarantees the circulation in each direction involving the preparation, moving, and monitoring of these circulating objects.

The armshells and necklaces are kept temporarily by each member of the Kula ring because they must be passed on to other members within a year. Therefore, the objects constantly circulate, in a linear fashion, around the ring. These valuables tend to be inalienable and must remain in the Kula ring. The exceptions are *Kitoma* valuables, which are those objects that are property of the holder and can be exchanged for anything, including money (Leach and Leach 1983). Accounts of object circulation in the Trobriand Islands suggest that the more an object circulates inside the Kula, the higher its value (Malinowski 1922). Pieces that have been circulating for longer become the most valuable and are given names that reflect their distinction within the system (Malinowski 1922). Additionally, within the collective, the reputation of the circulating objects’ owners increases with the passage of time and cumulative transfers (Foster 2008; Munn 1986; Weiner 1992).

Munn (1986), who examined value creation among the *Gawans*, one of the groups engaged in the Melanesian gift system of the Kula Ring, explains how circulation grants a systemic character to value creation. Munn starts her analysis from the idea that actions create value. For her, value is the importance of one’s actions (effort, time, and energy investments as well as sacrifice). She notes, however, that value creation “could not occur in isolation: in Kula exchange, at least (and by extension, in any social form of value), it can only happen through that importance [of one’s actions] being recognized by someone else” (in Graeber 2001, 45). That is, the outcome of an action requires the assessment of others to be considered valuable.

Munn (1986) further explains that circulation shapes the value created by actions through its capacity to promote spatiotemporal expansions and transformations. These transformations refer to what happens when an individual

extends his control over space and time through an action associated with circulation. For example, when a Gawan gives food to a visitor from another island, he forms a relationship with that person and extends his control (i.e., his ability to demand food in return from the visitor's island). Through the same action, the Gawan also extends his control over time because by giving food today, he will have food in the future.

Building on Munn's explanation of how circulation enables the systemic creation of value, Appadurai (1986) argues that, by looking at object circulation, we can understand how things become valuable (i.e., how value is created) and are valued (i.e., how value outcomes are assessed). Graeber (2001) also notes that circulation helps actors imagine the totalities (or wholes) that give meaning to their actions, and that the process of understanding the role of individual actions within the collective adds value to these actions. Along the same lines, Lambek (2013) argues that circulation requires "attending to value as applied to activities (acts, work, and practices) and to objects" (142) because the value generated through human activity becomes objectified in various rituals and performativity acts, including those that involve the circulation of objects and narratives among groups of people. These understandings of how circulation allows group members to benefit individually and collectively from the outcome of their individual actions supports our examination of circulation as central to systemic value creation in collaborative networks.

Consumer research has not been oblivious to the role of circulation in consumer collectives. The literature on gift giving, for example, has demonstrated that the circulation of gifted objects brings forth the idea of total prestation, a holistic scheme of exchange and the affective and relational outcomes associated with it (Sherry 1983), and noted the importance of the circulation of physical objects to the establishment of hierarchical intracommunity relationships (Weinberger and Wallendorf 2012). In particular, Giesler (2006) notes how the recurrent transference of digital objects, such as music files, helps enable a gift system among members of rhizomatic P2P networks. However, the literature on consumer gifting has not emphasized the role of circulation in value creation. Others have suggested that circulation can shed light on value creation that "occurs beyond the first flush purchase of the new in the subsequent (re)uses, display and exchange of objects" (Parsons 2008, 390; Thompson 1979). However, this line of thinking has not been sufficiently developed to account for the networks of interdependent participants involved in object circulation and the role of objects in promoting systemic value creation.

Circulation, as understood in the anthropology of value, reconfigures objects as central to the value-creation process. Even though objects always have been central to consumer research in value (Chen 2009; Holbrook 1999),

recent consumer literature on value creation has tended to focus on interactions among consumers to the detriment of consumer-object interactions. Schau et al. (2009), much like other key studies on value creation in brand communities (Cova 1997; Cova and Pace 2006; Muñiz and O'Guinn 2001), pay little attention to the role of objects in value creation. Research that has considered objects in accounts of value creation by consumers (Hartmann et al. 2015) does not consider objects in circulation. Moreover, given the computer-mediated nature of most collaborative consumer networks, we note the importance of considering as a circulating object any object, physical or digital, that is recurrently transferred among consumers (Belk 2013; Magaudda 2011; Kedzior 2015).

While the literature on the anthropology of value helps us understand and conceptualize the role of circulation in creating systemic value creation, it has not yet been updated to account for value creation in contemporary collaborative networks. Different from the communities described by Malinowski (1922) and Munn (1986), which rest on assumptions of stability related to routinized face-to-face interactions, a highly structured and tightly knit set of relationships, and a set of shared values, collaborative consumer networks involve computer-mediated collectives of people with loosely organized and geographically disperse structures and an emergent set of values that need to be dynamically negotiated among participants. Thus we argue that the study of the role of circulation in systemic value creation in contemporary collaborative consumer networks can help advance the literature on the anthropology of value. Having established the role of circulation in the systemic creation of value and its potential advantages over current approaches, we now proceed to the empirical part of our research.

RESEARCH CONTEXT

This research addresses the question of how value is systemically created in collaborative consumer networks. In order to do so, we studied the collaborative network associated with a global treasure-hunting game, the hobby of geocaching. Geocaching is a relevant global consumption phenomenon with more than 15 million active players (geocachers) hunting for more than 2.7 million hidden caches in all continents (Groundspeak 2015). Although the reasons to take part in geocaching vary greatly among networked participants (e.g., having fun, meeting people, or learning new things), the combination of outdoor adventure with online technologies has attracted many participants to the hobby since its origins in the early 2000s. In addition to hiding and seeking treasures with the aid of global positioning system (GPS) devices, a portion of the participants of the geocaching network engages in the circulation of trackable items known as travel bugs (TBs).

A TB may be any object with an attached numbered metallic tag sold for around US\$5 on the website geocaching.com, whereby it is trackable via GPS. A TB has a physical element (an object and an attached tag) and a digital element (an online profile). The particular online-offline nature of geocaching, along with the specific rules set for the circulation of TBs, makes their circulation traceable. The online platform allows players to register and archive the circulation of TBs along with each set of actions performed with the TB and the responses these actions trigger. This ability to trace actions and their outcomes makes the circulation of TBs in the collaborative network of geocaching the ideal context for examining value creation by networked consumers. TBs are also an ideal context for explaining systemic value creation because of their minimal nominal value. These objects do not provide immediate functional benefits from their usage, in contrast to what one may find in many cases of access-based consumption (e.g., Zipcar, BookCrossing, and toy libraries). Therefore, they do not possess intrinsic economic value (as compared with a car-sharing or a book-sharing consumer network, in which the temporary possession of a car or book brings value to participants by providing access to the functional benefits of cars or books). The absence of functional benefits associated with the access to the TB allows us to discuss systemic value creation while avoiding concerns of the functional value that the access to circulating objects could provide to individual participants. Functional value (Sheth et al. 1991) would confound our study because it would be difficult to determine whether people's perceptions of value outcomes are related to the interdependencies of actions and the circulation of these objects (as we found they are) or to some intrinsic utility derived from the object itself instead of being created by networked participants. By excluding functional value from this research, we are able to focus on the interconnections among participants in the network and on the role of circulating objects in enabling these interconnections.

TBs circulate with no predetermined itinerary among many geographically distributed participants of the collaborative network. Any geocaching player who creates a TB may set explicit goals for it (e.g., to travel from Canada to Alaska or to visit all 50 states in the United States), to be accomplished by being carried and transferred from person to person within the geocaching network. Once a TB's goal has been accomplished, another goal can be set for it by its creator, so the TB continues to circulate. Participants must register new TBs online and, if they opt for a premium membership to the website (www.geocaching.com), pay US\$30 a year for access to additional geocaching information that includes TBs' web pages, locations, and registries of transfers.

Multiple players perform actions that can be related directly to transferring TBs from one participant to another and from one location to another, or related to entering

new TBs into the network and overseeing their circulation. Other actions are performed irregularly by participants (e.g., writing a school report on the journey of a TB), and although they do not constitute routinized actions, they may contribute to the process of value creation. In particular, the actions that participants in the geocaching network undertake to circulate TBs highlight interdependencies among these participants regarding their goals and resources; that is, for one TB to circulate and reach the goals set for it by an individual participant, other participants need to take on actions involving its circulation (e.g., moving the TB, caring for it, crafting interesting experiences along the way, and reporting on the TB's journey to its "owner" [the emic term that geocachers use for a TB's creator] and to the broader geocaching network). Thus although TBs have goals, there is no centralized coordination, and their circulation depends on a series of transfers enabled by the collaborative actions of multiple players.

TBs may circulate in two ways: by being swapped among participants at geocaching events or, most commonly, by being dropped into and retrieved from hidden treasure boxes, or "caches." In both cases, geocaching players are expected to register each move of a TB on a TB profile at geocaching.com so that other networked participants may follow the progress of the TB and know its precise location at any time (figure 1). Once a TB is logged as "retrieved" from a cache or event, the person who retrieved it is responsible for caring for the TB and safely dropping it at another cache or event, where it will be retrieved by another player and thus continue to circulate toward its goal. Some TB profiles contain thousands of logs from multiple participants, demonstrating the collaborative nature of the network. As of September 2014, an estimated two million TBs were in circulation among geocachers worldwide (Groundspeak 2014).

METHOD

We used observation, interviews, and other ethnographic methods (e.g., participation and netnography) to "follow the thing" (Marcus 1995, 106), tracing and capturing the object's circulation and participants' involvement in facilitating it (Larsen, Axhausen, and Urry 2006).

To collect data for this study, one of the authors conducted extensive ethnographic and netnographic work in geocaching for five years (2008–13). She started collecting data through an exploration of the discussion boards on geocaching.com and soon expanded her online research to observe and participate on other websites, discussion forums, photo galleries, and blogs dedicated to geocaching. She joined geocaching-related Facebook groups and posted geocaching-related entries on a personal blog. She also created a Twitter account under her caching name (where she

FIGURE 1

TRACKING OF THE TRAVEL BUG CARRY THAT WEIGHT ON ITS PROFILE



regularly tweeted about geocaching and the GPS industry to more than a hundred followers, mostly geocaching players). Reporting on events she attended and caches found on geocaching.com, she shared her offline experiences with other players, exchanged pictures, and got answers to questions about specific caches and events. She also listened to podcasts that proved to be a rich source of data on geocachers' experiences and stories. As she collected data from these multiple sources, she took notes that were weaved into a preliminary analysis, always paying careful attention to how different participants interacted within the network.

Other offline activities included observing and participating in geocaching hunts, pub meet-and-greet nights, and weekend-long local and international events that included frequently engaging in casual conversations with geocachers. Many of these conversations or informal interviews (Fetterman 2010) were captured in detail in field notes. In addition to informal interviews, this author conducted in-depth interviews with networked participants to understand

their perspectives on the activity and to obtain information about specific aspects of the network.

As a participant in this collaborative network, this author also purchased and collected products related to the hobby, traded several items with other participants, received gifts and prizes, offered gifts, released and moved TBs and other trackable items, and shared food, space, rides, information, and countless geocaching stories with informants. She also collected documents and publications related to geocaching, subscribed to a geocaching magazine, bought and read books about the hobby, watched movies, documentaries, and TV shows that included geocaching in them, and read numerous news stories and articles about geocaching and related topics. More recently, we both participated extensively in the collection of netnographic data about TBs. Over the course of two years (2013–15), we engaged with the online platform (www.geocaching.com), following TBs' movements through profile changes and reading and observing online forum. We also followed blog discussions, collected photographs, and watched TB-related

TABLE 1
DESCRIPTION OF GEOCACHING DATA SET SPECIFIC TO TB CIRCULATION

Key online data	Key field notes	Other focal data	Focal travel bugs (release date, distance traveled)
380 single-spaced pages of text and pictures from TB profiles, blogs, and forum discussions related to TBs	15 single-spaced typed pages, including records of informal interviews and reflections on the authors' participation in the circulation of TBs	Videos of TB exchange tables recorded at geocaching events. Member checks with geocachers involved in TB transfer 25 TBs moved 1 TB created and tracked 5 in-depth interviews with TB movers	The ACME Thunderer (December 2012, 15,523.6 km) Carry That Weight (November 2005, 45,858.1 km) Iggly Prop (April 2007, 11,648.3 km) The Spirit of Ozzie the Osprey Love Doll (May 2007, 18,154.1 km) International Space Station Travel Bug (September 2013, 32,534.6 km)
450 minutes of YouTube videos of TB circulation		34 photographs of TBs taken and shared online Media reports on TBs	

videos posted on YouTube by participants of the geocaching network.

Extensive engagement in the field helped us understand the actions and values of participants in the geocaching network. As in any heterogeneous network, participants had different motivations to engage with the activity (Thomas et al. 2013). However, throughout our extended engagement with the network, it became clear that values associated with collaboration, enjoyment, discovery, trust, and achievement were ranked highly among participants and were openly defended and promoted by some of the most active geocachers.

As a result of this extensive fieldwork, a large volume of data in several formats was amassed: field notes, text, video, pictures, artefacts, and audio files. Naturally, the full extent of the data collected is beyond the scope of the present article. Hence even though our fieldwork and data set cover a larger group of consumer activities within this collaborative network, we report and mobilize only data on the circulation of TBs to address the research questions described earlier. The rest of the data set remains at the background of the research work to help us better situate the circulation of TBs in the cultural context of the collaborative network of geocaching. Most importantly, both of us are very familiar with the subset of the data related to the circulation of TBs and iteratively read, discussed, and coded the data described in table 1. Different forms of data were used as triangulation tools, and we have conferred and developed our interpretation based on several iterative movements between theorization and close readings of the data.

FINDINGS

Iterating between our ethnographic data and anthropological theories of value creation through circulation, we develop the general process through which value is systematically created in collaborative consumer networks.

Through this process, value is created by networked participants' interdependent actions (connected through circulation), transvalued into circulating objects, assessed, and aligned with the microcultural values of the collaborative network. Similar to other creative tasks developed in collaborative networks, the process of value creation assumes a distributed character; that is, it works in a modular fashion in which the large task of creating value for networked participants is composed of small modules that are voluntarily taken up by self-organized individual participants (Benkler 2006).

We unfold the value-creation process and its four concurrent synergistic subprocesses in the following order, even though these subprocesses may overlap as multiple iterations of the process and simultaneously may occur in a network: (1) *enactment of value-creating actions*, which generates *value potential*; (2) *transvaluation*, whereby value potential is objectified and assumes the form of *indexical value*; (3) *value assessment*, which generates *value outcomes*; and (4) *alignment of value outcomes and microcultural values*. Each of these subprocesses and value forms is explained in detail in the unfolding of our findings. To provide a better sense of the fundamental role of circulation in each of these subprocesses, as well as to promote the holistic interrelationships among them, we illustrate our findings with data on the circulation of four TBs, whose stories we unpack throughout this section.

We begin with the story of a TB called the ACME Thunderer (figure 2). Like all other TBs, the ACME Thunderer was created by a geocacher, who attached a trackable tag to an old whistle. The same geocacher created an online profile for the ACME Thunderer, where the circulation goal for this TB is stated: "This old sports whistle needs to make it back to England where it was made. It would be a hoot if it could be used at a soccer match for at least one play and then come back to Canada. Although it could be well travelled anywhere as long as it made it to some sporting events." The profile also notes that the TB

FIGURE 2

THE ACME THUNDERER, HELD BY A HOCKEY REFEREE



NOTE.—Photo by Michael Eger, edited by the authors.

has traveled 9645 miles since 2007, and provides a map of the TB's whereabouts as well as photos taken by the various people who have participated in the circulation of the TB. Tracking the circulation of the ACME Thunderer provided a clear illustration of the interdependence that exists among networked participants and their value-creating actions. This interdependence, which is central to systemic value creation, is enabled by the circulation of the ACME Thunderer. A post shared by Czech geocacher Kapsa in his blog exemplifies how circulation promotes interdependence among value-creating actions:

Last autumn I set out to hunt for a little more challenging sport-themed unknown geocache (GC2XDWB). [...] I was lucky enough to meet another geocacher, nicknamed d-n. Since many hands make light work, we reached the final cache with ease. There were several TBs in the cache . . . I left with a TB which looked quite ordinary at first sight. It turned out to be 'The ACME Thunderer' and that is how the story began. Having arrived home, I immediately switched my computer on to log . . . the TB. While the computer booted, I contemplated the TB with interest. 'Such a nice whistle' I thought, and could not help blowing it. The whistle came with such force that I turned temporarily deaf. . . . I was definitely intrigued with this TB and started examining it more closely, since it was now obvious it was not just a

common whistle. I learned from the description that the TB came from Canada and that it was a whistle for ice-hockey referees, and was more than fifty years old. The owner wanted the TB to be used for at least one more match. I studied the logs carefully and noticed that the mission had still not been achieved; everyone seemed to give the mission the deep six. Well, this was a proper challenge for me!! I . . . put a hesitant question in my favourite geocaching Facebook group. In no time at all a geocacher nicknamed Rajczatko responded, saying he knew a hockey official and that he might even be able to arrange for the whistle to be used at an Extra League match! It was almost too good to be true. . . . Rajczatko agreed to meet me when I came to Brno for Christmas. He took the TB then, and a few weeks passed with no news. I had not heard from him and started to worry. Would we succeed at all? Finally Rajczatko wrote a message. Yes!!! A referee agreed to use the whistle at an Extra League match today! I was a bit disappointed because I could not leave for Brno on such a short notice but there was nothing I could do. I asked Rajczatko to find somebody to photograph the match. He managed to do that as well, and I must say the pictures are really worth seeing. . . . When I was going through the photographs, I came across a real gem. First imagine the atmosphere—Czech Extra League playoff . . . , a packed stadium in Brno humming with suppressed energy, the turning point of the whole match. The referee is blowing his whistle. Penalty shot! Wait . . . look at his hand . . . it is not just a common whistle. . . . In fact the referee is blowing the TB!!! It took many weeks to organise this adventure and many people, both geocachers and muggles [i.e., non-geocachers], took part in it. Many thanks to everyone that contributed, and of course to the willing referee—Mr. Rene Hradil.

For the ACME Thunderer to circulate, various networked participants had to collaborate. One participant's action contributed to the execution of another participant's action, and the integration of these actions through the recurrent transference of the object among participants delivered value outcomes to the networked participants. Even actions that are not directly related to the transference of the circulating object—such as asking a question in one's favorite geocaching Facebook group—are linked to other value-creating actions through the TB's circulation. The complete set of value-creating actions and participants involved in the circulation of this TB is registered on the ACME Thunderer's profile page (partially reproduced in the appendix). Examining this story and other selected examples from our data set, we describe and evidence each subprocess of value creation in the sections that follow.

Enactment of Value-Creating Actions

Enactment is best described as a subprocess of value creation where value-creating actions are performed by participants. Following Lambek (2013), who invites us "to think about action from the perspective of value or about value

from the perspective of action” (141), we define a value-creating action as the onetime performance by a networked participant of any act that has the potential to create value for participants in the network. As noted by Munn (1986), actions have potentialities that are defined culturally and signal to agents what key outcomes they can expect from a particular action.

The ACME Thunderer’s story reveals a series of value-creating actions, such as its owner setting a goal for it, Kapsa retrieving the TB from a cache, Kapsa asking questions on a TB-related discussion forum and Rajczatko responding to them, and Kapsa and the referee interacting with the TB. Another value-creating action by the geocacher Kapsa is his sharing a story about the TB on his blog. Even though Kapsa’s story presents these many value-creating actions in a sequential fashion, we note that multiple actions involving the same TB may be performed by individual participants simultaneously. For instance, while the referee interacted with the TB, other geocachers could have posted comments on its online profile page. Moreover, at any given moment, a large number of value-creating actions involving the millions of TBs circulating in the collaborative network are being performed spontaneously across space, triggering numerous iterations of the value-creating process, each associated with one or more circulating objects. For instance, while Kapsa found the ACME Thunderer in a geocache, other participants around the globe were finding, transferring, and interacting with other TBs.

Some value-creating actions are repeated routinely in the network by participants who share an understanding of the meaning of these actions, which makes these actions similar to social practices (Reckwitz 2002; Schatzki 2010). Yet many are not. Our data set reveals many enactments of spontaneous, random, and onetime actions—such as the onetime action of using a TB as a whistle in a hockey game—that become interdependent through object circulation. In addition, our data set reveals value-creating actions performed by nonhuman participants who would hardly be able to enact social practices on their own. The circulation of another TB, the Spirit of Ozzie the Osprey Love Doll, illustrates this broader concept of enactment. The Spirit of Ozzie has moved through a particularly impressive circulation path. When a geocacher spotted a blue teddy bear with what seemed to be a tracking tag attached to it in an osprey’s nest, he inquired on the forums about any missing TBs in the area, and that thread generated a lot of interest among geocachers. These networked participants spent months monitoring the object through the nest’s live camera and organized a kayak expedition to search for and rescue it so it could resume circulation. In this case, the bird, the camera that monitored its nest, and the geocacher who accidentally spotted the blue teddy bear all unintentionally performed value-creating actions. Each of these actions consists of a onetime performance that has not been

reproduced by other participants or in relation to any other TB. Also, it is unlikely that organizing kayak expeditions to rescue objects from birds’ nests will become common practice in the collaborative network of geocaching. Nevertheless, all these actions became connected through object circulation and contributed to enhancing the perceived value of this TB in the network. This shows that it is important to consider unintentional, unplanned, haphazard, and onetime actions (instead of only routinized actions) as also capable of creating value. Hence we expand prior understanding of value creation through action, noting that all actions can create value if they trigger the value-creation process.

In the subprocess of enactment, each performance of a value-creating action triggers the systemic process of value creation through the generation of value potential. We define value potential as the field of possible value outcomes generated by the performance of a value-creating action. Every time an action is performed, it generates multiple opportunities for the creation of value, that is, for delivering outcomes considered beneficial by networked participants. For instance, when geocacher Kapsa handed the ACME Thunderer to geocacher Rajczatko, this action triggered the process of systemic value creation through generating a field of possible outcomes. The TB could be used in a hockey match and achieve its goal, but it was also possible for the TB to get lost or damaged, to be transferred to another geocacher, to be used in other sports matches or activities, or to be gold plated, should Rajczatko feel the TB needed a special touch. Hence it was uncertain whether the action of transferring the TB to Rajczatko would produce value outcomes. What was certain at the time is that it created a field of possibilities that included opportunities for further action and for making the triggering action a value-creating one.

Performances related to a TB may generate subsequent actions involving the circulation of that TB (e.g., retrieving a TB from one cache allows it to be transferred to another geocacher); further opportunities for interactions among participants (e.g., asking a question about a TB on the forums leads to meeting other participants who discuss it); and network growth (e.g., dropping a TB on a cache may lead to it to being found by geocachers who will take interest in moving TBs for the first time). Since circulating objects get transferred among participants of a network, circulation connects one value-creating action to subsequent actions by other participants, promoting interdependencies among these actions and among the participants who enact them.

As illustrated by Kapsa’s experience with the ACME Thunderer, value potential also can include opportunities for fun and enjoyment, further collaboration (e.g., retrieving a TB fosters the need to pass it on to another geocacher), or discovery (e.g., using the TB in a hockey match may motivate other geocachers to take an interest in

hockey), producing potentialities that are expected to generate benefits to the collective. Yet as Munn (1986) notes, these actions are neither guaranteed, “nor are they assured; they are merely key potentialities or capacities and may, of course, fail to be realized in a given case” (8). For instance, if value-creating actions are performed with a TB that stops circulating shortly after (having been lost or stolen), the value potential generated by these actions will go unrealized. As our discussion of the remaining subprocesses of systemic value creation will make clear, it is only through circulation, when actions are transvalued to objects and assessed by many participants, that these potentialities become value outcomes for other participants.

Transvaluation

When a value-creating action is performed, the value potential it generates could go unnoticed, particularly by those networked participants who have not been involved in or witnessed the performance of that value-creating action. However, our research on the collaborative network of geocaching suggests that most value potential moves toward producing value outcomes through what we refer to as transvaluation that happens when the value potential generated through performances of value-creating actions becomes objectified (Lambek 2013). Transvaluation operates through registrations of value-creating actions on the physical and digital elements of circulating objects. Hence through transvaluation, circulating objects materialize value-creating actions performed by networked participants.

For instance, when Rajczatko photographs the hockey match in which the ACME Thunderer was present, he registers the value-creating action of using the TB in a hockey match. This photo, posted on the TB profile page, is linked to the performance it registers and objectifies the value potential generated by this performance. We refer to these digital (e.g., posts, logs, photographs, and stories) and physical registers (e.g., dents, scratches, marks, and other modifications made to or suffered by objects) as indexical cues. An indexical cue has factual connections with its object (Grayson and Martinec 2004; Grayson and Shulman 2000; Peirce 1998). Our research suggests that digital and physical registers on TBs are indexical cues because they have a factual, spatiotemporal connection with the value-creating actions they represent. In other words, these registers are indexical cues because they point to a moment in time and space when actions created value potential. The sum of the value potentials generated by all actions that become interdependent via object circulation and are registered as indexical cues in the digital and physical elements of circulating objects is what we call indexical value. Hence indexical value is value potential in its objectified and aggregated form.

Transvaluation is analogous to Miller’s (1987) notion of objectification in terms of the dialectical process it describes. Miller draws on Hegel to explain objectification as the reworking of objects by subjects in order to support distinct forms of sociality as well as a variety of consumer identity projects. While the reworking happens, consumers are also transformed as ideas, values, and relations are promptly internalized by them. It is the substrate of consumers’ transformations that is then recast onto objects, completing the objectification process. Hence objectification is a dialectic process whereby consumers and objects are co-constitutive in their relationship. Yet transvaluation is different from Miller’s conceptualization because it focuses on the dialectical relation between action and objects rather than subjects and objects. Transvaluation, much as Lambek (2013) describes it, is “an objectification of value itself” (142). In this sense, the circulating objects we examine carry a type of value that is an externalization of the value potential created by the multiple interdependent actions performed in the network. The indexical value that circulating objects accumulate is neither the outcome of the actions performed by networked participants nor an externalization of these participants’ identities. Rather, indexical value is an externalization of the value potential produced by multiple enactments of actions.

The story of another TB, Carry That Weight, told by its owner, a geocacher who goes by the pseudonym Dark, helps illustrate the process of transvaluation:

Back in November of 2005, I released a travel bug called ‘Carry That Weight.’ It was a 1-ounce fishing weight connected to the dog tag. In the description on the TB page, it said that the TB was born of the Beatles ‘Abbey Road’ era, and would love to somehow make it over to Abbey Road. Sometime after its release, I kind of got away from geocaching. Two nights ago, I went online and just for laughs I thought that I would look at geocaching.com and then I looked at my profile, etc. When I started looking at my Travel bugs, I noticed that Carry That Weight had over 13,000 miles on it. Not that the mileage was a record or anything, but it was the farthest travelled of any of my TB’s. As I started looking at it, I noticed that there were some photos that [geo]cachers had attached, and then I realized what I was looking at. There was a picture of a [geo]cacher holding up the TB, in the crosswalk ON ABBEY ROAD!!!! . . . It literally sent shivers up my spine. Thank you ever so much to Misinformed and the other [geo]cachers who made this incredible journey possible. To say the least, it made my day. It was truly a dream realized. I never thought that I would be jealous of one of my own Travel bugs, but I guess I am. (Dark, geocaching.com forums, November 2009)

As Dark’s story shows, the value potential generated by the multiple actions of retrieving and passing on the TB—which were performed by dozens of networked participants through the years Dark had been away from geocaching—

could have gone unnoticed had these participants not logged these actions on the TB's profile page. Each log created a register of an action and became an indexical cue that transvalued the value potential generated by that action to the TB's profile page. Dark also refers to the photos of Carry That Weight taken in different locations and shared by other participants. These photos transvalued to the on-line profile the value potential of various actions that were performed with the TB. In particular, a photo of Carry That Weight on the crosswalk at Abbey Road (figure 3) is an indexical cue that registers some of the value-creating actions that enabled the TB's goal accomplishment.

Complementing digital registers, such as logs and photos, physical registrations, including intentional or unintentional alterations to circulating objects, may become indexical cues of the value-creating actions that have generated them. For instance, in the case of the Spirit of Ozzie, the blue teddy bear that was left on a bird's nest got feathers stuck to it, attesting to its visit to the nest. Geocachers also intentionally may add clothes, pins, or other accessories to a TB that objectify the value potential produced by certain value-creating actions. For example, a TB was taken to a baseball game and autographed by a player, creating a registration of the TB's presence at the game. Even more subtle cues, such as the wearing out of a circulating object through time, may operate as indexical cues that remind networked participants of a TB's extensive collaborative circulation path and the many value-creating actions performed with it. Of note, the owners of certain TBs incentivize other participants to create digital and physical

registrations of actions involving these TBs. For instance, a statement on Carry That Weight's profile page reads, "Pictures taken of me at every cache I sit in would be awesome," and Iggy Prop, a TB made from an airplane propeller, provides a pen for each participant who interacts with it to sign it (figure 4). Intentionally or not, the owners of these TBs are supporting value creation within the collaborative network by enabling and incentivizing instances of transvaluation.

As the objects circulate, they accumulate registrations and become loaded with indexical value. Each time players transfer a TB among themselves and a log that transfer on the TB profile, they are adding another indexical cue to the circulating object. Personal profiles on the geocaching website are linked to TB profiles, allowing players to track the movement of all of the TBs they have created and transferred in the network. Profiles for older TBs contain a long list of logs (e.g., 462 logs for Carry That Weight, circulating since 2005, and 485 logs for Iggy Prop, circulating since 2004); that is, they carry a long inventory of links to value-creating actions and their value potential. The more an object circulates, the more logs (and thus indexical cues) its profile contains and the more accumulated indexical value it holds. As long as the object exists, these links are preserved. This suggests that indexical value has two important properties: storability and durability. That is, indexical value can be accumulated in digital and physical objects, and it will continue to exist as long as these objects exist. Another illustration of these properties is found in the hundreds of signatures scribbled on the surface of

FIGURE 3

A GEOCACHER SHOWS CARRY THAT WEIGHT ON ABBEY ROAD



NOTE.—Photo on the left by Redirected Male; photo on the right by DCDawn.

FIGURE 4

SIGNATURES AS INDEXICAL CUES ON TB IGGY PROP



NOTE.—Photo by L.B.K.

oversized TB Iggy Prop (figure 4), each corresponding to an online log on the TB profile. These signatures and logs will continue to exist as long as the TB continues to exist, and they will continue to accumulate as long as the TB continues to circulate.

The storability and durability properties of indexical value provide the required flexibility for participants of collaborative networks to create systemic value. Since many of the value-creating actions performed in the network are not characterized by the shared procedural understandings, rules, and meanings that characterize social practices (Schau et al. 2009), cumulative records of these value-creating actions are fundamental in evidencing actions and their value potential for networked participants who might have been distant in space and time. In other words, while stored on TBs in the indexical value form, the value generated by performances of value-creating actions can travel long distances and reach geocachers across the globe. And even if the network loses participants and incorporates new ones, the indexical value generated in prior configurations is preserved and can be accessed by existing participants. These properties also expand geocachers' temporal reach by allowing the assessment of the indexical value associated with actions performed many years before. For instance, the story of Carry That Weight shows how Dark becomes grateful to other geocachers as he logs on to his TB profile page and is able to visualize, through indexical cues, the many actions that allowed Carry That Weight to circulate and reach its goal. Dark saw logs posted by all geocachers who helped move the TB as well

as photos taken by these participants along the way (appendix). Even though he had not closely followed the circulation of his TB for some years, Dark was able to access actions performed for his TB and their indexical value by viewing its online profile.

Our exposition of the properties of indexical value suggests that this form of value is consistent with the “spatio-temporal transformations” (Munn 1986, 8) promoted by the actions that Munn discusses. Yet whereas the Gawa community investigated by Munn relies on subjective aspects (such as memory and beliefs) to acknowledge socio-temporal expansions, participants in the TB network count on indexical value to retrieve and assess the spatiotemporal expansions promoted by value-creating actions. Here it is evident that the presence of indexical value in digital as well as physical objects, together with its durable and storable properties, amplifies the outcomes of value-creating actions through space and time. Our data reveal that most of the accumulation of indexical value occurs in the digital elements that compose TBs (i.e., TB profile pages on geocaching.com). Physical elements have a reduced capacity to accumulate indexical value, which limits the amount of value systemically created through them. In contrast, digital elements, such as online profiles, can store a large number of stories and register the outcomes of numerous actions, which expands the network's capacity to create value systemically. Moreover, the traceable nature of digital cues imparts these registers with the capacity to operate as certificates of authenticity, assuring participants of the collaborative provenance of a circulating object (Geary 1986). Thus these findings demonstrate that both the physical and digital materiality of circulating objects contribute to the systemic creation of value, but caution that each plays a different role in the systemic process of value creation.

Transvaluation can be compared to other similar processes that examine materiality through examining the role of objects in the lived experience of consumers: (1) contamination, whereby the immaterial qualities or the essence of a person can be transferred to an object through physical contact (Newman, Diesendruck, and Bloom 2011); (2) totemization, whereby through rituals and pilgrimage, objects can become singularized, often acquiring a sacred aura (Belk, Wallendorf, and Sherry 1989; Kopytoff 1986) and becoming symbols of a group (Levi-Strauss 1966); and (3) fetishization, whereby possessions materialize consumers' magical thinking and acquire a special aura connected to the object's magical powers (Fernandez and Lastovicka 2011). However, in contrast to these other forms of objectification, transvaluation is linked specifically to the field of possible outcomes generated by value-creating actions enacted by networked consumers. Transvaluation objectifies the value potential created by these actions, storing it as indexical value in physical and virtual objects as the object circulates.

In sum, transvaluation contributes to the systemic creation of value by connecting multiple actions performed by individual participants across space and time to objects that circulate and carry indexical value within the collaborative network. Indexical value, however, cannot become value outcomes until participants like Dark assess it and share those assessments with the collaborative network. We discuss the subprocess of value assessment next.

Value Assessment

Geocachers constantly make individual judgments about the outcome of value-creating actions performed in their collaborative network. Even those players who have not witnessed the actions performed by other players can assess the outcomes of these actions once they access circulating objects and observe the registration of these actions as indexical cues. Hence value assessment is an ongoing subprocess whereby the indexical value stored in circulating objects is assessed by participants in the network. Value assessments generate value outcomes to those who access the digital and physical elements of circulating objects, and these assessments can have their effects potentialized when they are shared with other participants in the network. Naturally, not all assessments are verbalized or shared by networked participants. Through our online and offline fieldwork, however, we uncovered many assessments manifest as emotional appraisals (“That is so cool”) or rational considerations of indexical value (“We kept the TB for way too long, but it was worthy because we took it to Disneyworld”). Expressions of appraisal and rational considerations usually were made by individual participants who commented on posts, commending or thanking those players who perform value-creating actions.

A good illustration of assessment comes from the Spirit of Ozzie’s circulation path. Transvaluation has allowed the Spirit of Ozzie to accumulate indexical value in the blue teddy bear and on the TB online profile. The Spirit of Ozzie is now a popular TB within the value-creating network and has accumulated indexical value through the transvaluation of the various value-creating actions of many participants. The storable and durable nature of indexical value has allowed geocachers who have never personally encountered the Spirit of Ozzie to examine its circulation path, learn about its multiple transfers, relate to the value potential generated by value-creating actions performed with it, and make assessments of it. Geocachers often mention this TB and its adventures in discussion threads created to highlight the most exciting, interesting, amusing, or curious TB-related stories. Geocacher Henki, for instance, manifests his appreciation for the TB in a thread dedicated to it: “This is by far the best thread on the forums. We’ll be watching Ozzy’s [*sic*] progress daily.” Because these assessments are shared with other participants in the network, they increase the perceived benefits

(value outcomes) associated with the TB. Henki’s appreciation was also recorded as a log on the TB’s profile, and as the TB circulates among other participants, they have the opportunity to incorporate this assessment in their own.

As multiple value-creating actions are being performed concurrently and their value potential indexed within the collaborative network, value assessments are dynamically changing, with prior assessments of past performances and indexical value shaping the assessment of new ones. Value assessments are important because they define the types of value outcomes generated by value-creating actions.

Various types of value outcomes, defined as personal, subjective, and emotional assessment (Chen 2009), have been discussed in consumer research. Hedonic value, for instance, has been explained as the perceived benefit of experiencing pleasure, happiness, and other emotions (Babin et al. 1994); utilitarian/functional value as the benefit of functionality derived from using a product or service (Babin et al. 1994); linking value as the benefit of being connected socially to others (Cova 1997); reputational value as the benefit of being well regarded by others (Corneo and Jeanne 1997); and epistemic value as the benefit of gaining new knowledge from an object or experience (Sheth et al. 1991). Consistent with prior research, we found that participants’ subjective assessments generated value outcomes in the network. However, different from prior research, we found that the overall assessment of subjective worth by a networked participant is based not only on this individual’s personal experience with an object but, most importantly, on the indexical value stored in that object. For example, geocacher Aiden reports on his encounter with the Spirit of Ozzie:

When I first saw that mmacgown had picked this up I was all like “OH MY GOOSSES!!!” that I had to email her and tell her that she so had to let me see the Spirit of Ozzie in the fluff and today I got to!!!! I was totally excited to actually get to meet this awesome TB!!! (log on the Spirit of Ozzie profile page on geocaching.com, December 2008)

This assessment suggests that the TB provided Aiden with hedonic value—the benefit associated with entertainment and emotional worth (Babin et al. 1994). In this case, hedonic value was produced by an individual assessment of the TB’s indexical value, which includes the registrations of all performances of value-creating actions involving that TB.

Similarly, several participants manifest their deriving of hedonic value from the TB Iggy Prop on logs posted to Iggy Prop’s profile on geocaching.com:

Oh my god!!! This one is was [*sic*] by far the largest TB I’ve had the pleasure of laying my eyes on! I had the “pleasure” of carrying it into the “Park & Gab 53: The Trackable Event” [geocache code] locale and back into georeyna’s cachemobile again at the end of the evening, let’s just say it got some weird looks by the non-caching restaurant patrons. Thanks for placing this one into the wild . . . and I found a

spot somewhere to add my name to it as well, yippee! (Raven, September 26, 2012)

Probably the coolest trackable I've ever seen! Thanks Snoogans for bringing it! (Toastytreat, June 18, 2012)

We discovered this most impressive travel bug at the Will Cache for Food event. Fly far and well, Iggy. (Caveatobservator, June 18, 2012)

Even though these examples highlight hedonic value as an outcome of individual assessments, multiple types of value outcomes can be generated, depending on the nature of the benefit perceived by participants. For instance, in telling the story of his TB Carry That Weight, Dark refers to various value outcomes he derives from the TB. Dark describes the exciting moment when he realized his TB had traveled extensively and visited Abbey Road and, thus, denotes his deriving epistemic value (Sheth et al. 1991). Dark also expresses how finding out that his TB had achieved its goal "literally sent shivers up [his] spine," denoting hedonic value as an outcome. In addition, Dark thanks other participants "like Misinformed and the other [geo]cachers, who made this incredible journey possible" and, thereby, denotes linking value as an outcome (Cova 1997). None of these assessed benefits would have been possible had participants not performed a series of value-creating actions whose potential value became registered and accumulated (i.e., transvalued), thus allowing them to be assessed. For this reason, we consider the hedonic, epistemic, and linking value generated by Carry That Weight's travels as specific outcomes of systemic value creation. Similarly, the circulation paths of the TBs ACME Thunderer and the Spirit of Ozzie, as well as the registers of the circulation of several other TBs we encountered during our fieldwork, include many participants' manifestations of the various types of value outcomes these participants derive from meeting circulating TBs. Linking, hedonic, and epistemic value are not the only value outcomes networked participants derive from the systemic process of value creation, but they were the most salient and recurrent in our data set.

Overall, the subprocess of value assessment contributes to the systemic creation of value by allowing networked participants to evaluate dynamically and collectively the outcomes of interdependent value-creating actions performed across time and space by other participants. As we have shown, this systemic process of value creation yielded various types of value outcomes. However, we observe that the systemic process of value creation does not stop here. Assessments and value outcomes help constitute the microcultural values of the collaborative consumer network. This subprocess is explained in the next section.

Alignment of Value Potential, Value Outcomes, and Microcultural Values

Microcultural values refer to the ideals or values that help define what is acceptable or unacceptable, important

or unimportant, in a particular microculture (Thompson and Troester 2002). Different from consumer communities, which by definition have a set of shared values that inform the activities of all members and give them a sense of collective identity (Schouten and McAlexander 1995), collaborative consumer networks have emergent microcultural values whose importance fluctuates as the network expands and value-creating actions are performed in it. In loosely organized networks, microcultural values are less apparent, while in more tightly organized networks, microcultural values are more easily identifiable. Our extensive contact with the geocaching network has allowed us to identify five microcultural values that, throughout our fieldwork, were the ones most commonly expressed by networked participants: achievement, collaboration, discovery, enjoyment, and trust. These microcultural values generally were expressed tacitly (through participants' actions, interactions, and assessments of these), but some participants were quite overt about the values they espouse. Consider, for instance, how Second Degree explicitly states the importance of trust for the network in a post on the discussion forums of geocaching.com:

We trust that most people will want to return something to the game by hiding and maintaining a cache. Without that, the game ceases to exist. We trust that when we leave these caches out in the wild, that the people who find them will return them in the same condition as they were found (if not better), but will not substantially alter the owner's original intent. We trust that people are telling the truth when they post their logs. We trust that the description and ratings the owner has provided is reasonably accurate. (Second Degree, March 2, 2010)

Similarly, other participants often express their adoption of the microcultural values we identify as key in the network. Even though not every participant embraces these microcultural values, these values play an important role in systemic value creation because they influence assessments that networked individuals make of each other's past actions, as well as the performance of future ones. This happens through the subprocess of alignment.

Alignment involves recurrent adjustments between individual and collective perceptions of what is valuable and, consequently, among different forms of value (value potential, value outcomes, and microcultural values). Alignment implies microadjustments to different parts of the process of systemic value creation. These can be (1) adjustments to the actions performed and their value potential so these actions better express the microcultural values prevalent in the network; (2) adjustments to value assessments so these can better express the microcultural values of the network; or (3) adjustments to microcultural values so these better express discrepant assessments made by new participants as well as the value potential and value outcomes created by emergent actions.

We find that object circulation intensifies alignment by promoting further connections among participants, thereby making the value forms created by the actions of some participants accessible to others. In this subprocess, participants have the opportunity to become aware of the collective consequences of their doings and of the collective assessments of their own past actions. Moreover, alignment generates knowledge regarding what is valued in the network, informing participants about both established and emergent microcultural values.

Consider the amount of freedom networked participants have to decide which actions they will perform, as well as where, when, and how. In starting an iteration of the systemic process of value creation, participants may set innovative goals for TBs (e.g., “travel to Abbey Road,” “go around the Earth,” or “meet the Eiffel Tower”); aggregate new circulating objects and supporting elements to the network (e.g., turning a disposable photographic camera into a TB to register activity); and circulate TBs in creative ways (e.g., creating TB races in which TBs compete to be the first to arrive at a place or creating TB hotels near airports to make TB transfers easier for players who travel). The circulation of TBs allows participants to verify whether the value potential generated by these original performances is aligned with the microcultural values in the network. Hence if setting up a TB race generates a field of possibilities and the subsequent actions promote achievement, collaboration, discovery, enjoyment, and trust, the value outcomes of these original performances are assessed as valuable. The success of an innovative action aligning with microcultural values prevalent in the network stimulates participants to perform the same or similar actions in the future. For instance, when a TB was taken to the International Space Station, a schoolteacher used this trip and the astronaut TB to get his students interested in learning more about science. Soon, other educators and schools were replicating this action, creating a movement to promote learning through the transferring of TBs.

Alignment also involves adjustments to the importance of other actions performed in the collaborative consumer network. Actions that are performed frequently are likely to be deemed important by geocachers, just like the value potential and value outcomes resulting from these actions. For instance, setting a goal for a TB is performed every time a new TB is launched into circulation. Because it is considered aligned with the microcultural values of the network, setting goals for TBs became institutionalized as a group practice, and there are shared understandings of (as well as some explicit instructions for) how a TB goal should be determined. The prevalence of this practice in the network underlines its importance, reinforcing certain microcultural values among participants.

Overall, through promoting mutual adjustments among actions, their value potential, value outcomes, and microcultural values, the subprocess of alignment implies that

each iteration of the systemic process of value creation changes the context for the next one. This happens organically, through the circulation of TBs. When a new TB is set to circulate, it often expresses the microcultural values of the network through its goals, material properties, and affordances. As this TB circulates, these goals, material properties, and affordances influence subsequent value-creating actions performed with the TB and the value outcomes derived from engaging with it, promoting alignment between these value forms and the microcultural values of the network. For instance, the ACME Thunderer is partly a hockey whistle, which invites participants to blow it, an action that furthers the microcultural values of discovery and enjoyment through playful interaction with the object. Iggy Prop, a TB made from an airplane propeller, is heavy and bulky. These characteristics invite collaboration among participants because the object is too cumbersome to be moved by one person alone. Iggy Prop’s features also catch the attention of other players who come across the TB in geocaching events, fostering discovery and promoting the achievement of its goal, as stated on the TB profile: “To meet more people, travel further, and have more fun than any other large bug out there.” Similarly, long-term participants in the network frequently refer on the geocaching.com forums to “if you can close your hand around it” as the golden rule for creating an ideally sized TB, noting how objects that have about the size of a closed fist afford more recurrent transfers, achieve their goals faster, and circulate for longer. Another geocacher advises on discussion threads in the geocaching.com forums, “if you want your [travel] bug to survive, make it UGLY. . . . Don’t send those cutie plush bears and bunnies out there . . . attach your bug to a chunk of rock, or a scrap of wood, etc. It’ll probably go farther than you expected” (Go Jaybee, February 13, 2004). This warning suggests that too attractive objects can be kept or stolen, which would interrupt their circulation, cutting short the collaborative work that leads to systemic value creation.

In sum, TBs’ goals and material characteristics provoke performances of certain value-creating actions and discourage others, influencing future value outcomes. This type of objectified alignment is particularly relevant in networks like geocaching, where collaboration happens among people who are distant from each other and rarely connect in person. In materializing values and preferred actions, TBs expand these preferences across time and space as they circulate among networked participants and foster alignment throughout the network.

In addition to the organic alignment promoted by object circulation, alignment may be the result of negotiations among participants. For example, when tracking the circulation of a particular TB, a participant noticed the activity of a small subset of geocachers who had engaged in numerous transfers of TBs among themselves. The participant is bothered by these performances, disputing whether they

will produce valuable outcomes or not, and contrasting them with idealized value outcomes:

I have been watching a TB that I sent out mid last year, one of our first, and it has done some good movement recently. However, it seems to have been placed in . . . a cache that is archived, and has been for a long time. This cache also appears to be holding about 20 other bugs. [My TB] is just being handed off from person to person, never touching an actual cache. It looks like my bug also went in and out in about a day, but that doesn't mean that it actually moved, or even left the hands of the original person. I read about people at events that just write down the TB number and log it, while they never really had it in the first place, they just saw it. . . . I guess I just feel a bit jipped [*sic*] because I wanted my bug to be a traveling bug, not a trading bug. In the long run, they may have the best of intentions, but at this point it seems a bit strange. Is it possible to request a change to the Geocaching site, that you are not able to place new trackables into an archived cache? Since the whole idea of an archived cache is that it is not suitable for use—basically not a cache. (Sytar, January 9, 2008, posted on Geocaching.com forums)

Sytar's post transpires from tension over her perception of a misalignment between the microcultural values and certain unusual performances involving her TB and others. Sytar feels she cannot trust these participants' intentions. Moreover, her observations suggest that she perceives these actions as threatening to other microcultural values of the network: collaboration, enjoyment, discovery, and achievement. When tensions like this manifest, alignment is triggered in the collaborative network. For instance, in the discussion thread initiated by Sytar, other participants, such as Eartha, respond expressing their willingness to accommodate diverse performances:

All of the bugs in that cache were passed on to other cachers on 1/7/08. It does seem to be an odd way to move bugs. Not the natural movement you would expect from a TB, but everyone plays the game in their own way. As long as the bugs aren't taken way out of the way of their goal, or held for too long waiting on the trade, there shouldn't be a problem. It's not my cup of tea, but some people drink coffee, go figure. At least they have been moved on. (Eartha, January 9, 2008, posted on Geocaching.com forums)

Eartha's language indicates her efforts to reframe the value potential generated by those performances and accommodate it to the microcultural values prevalent in the network. She highlights that "everyone plays the game in their own way" and that "there shouldn't be a problem" in flexing the rules to accommodate these unusual performances.

Overall, our finding of alignment through object circulation in the collaborative network of geocaching expands the notion of frame alignment (Thomas et al. 2013) to value creation by showing that, beyond fostering practices

that unite and accommodate different actors, the process of systemic value creation promotes alignment between value forms (value potential, value outcomes, and microcultural value systems) and, in doing so, supports the network capacity to create value at the collective level, even though its highly autonomous participants operate independently of centralized coordination and control.

DISCUSSION

How Circulation Creates Value Systemically

Our examination of the circulation of TBs in the collaborative network of geocaching identifies a process of systemic value creation that comprises four subprocesses (enactment, transvaluation, assessment, and alignment) and explains how this process unfolds. Through object circulation, the actions performed by various individuals become interconnected. Transvaluation materializes the value potential generated by individual actions in the form of indexical cues that accumulate as indexical value in various digital and physical objects. The characteristics of indexical value (storability and durability), along with object circulation, allow geographically and temporally distant networked participants to assess the outcomes of actions they may not have witnessed or may have performed a long time before. Depending on the assessments of indexical value made by networked participants, different types of value outcomes emerge from the process. Finally, a dynamic subprocess of alignment happens within the network whereby actions producing outcomes that are recognized as valuable by participants are reinforced and reproduced, while actions producing outcomes that are not recognized as value creating are negotiated among participants, resulting in alignment among value potential, value outcomes, and the microcultural values of the collaborative network.

This study's findings demonstrate how object circulation promotes systemic value creation and detail the role of object circulation in each of its subprocesses. In the subprocess of enactment, object circulation promotes interdependencies among the various value-creating actions performed by participants in the network. In transvaluation, circulation allows objects to collect and store the value potential generated by multiple actions performed across space and time by various participants who access the object through its multiple transfers. In assessment, circulation enables participants to assess dynamically and collectively the indexical value stored in objects as these objects are accessed and revisited. In alignment, object circulation organically promotes value-creating actions that are in conformance with the microcultural values prevalent in the network and adjusts these microcultural values to account for successful innovative performances.

This examination of the circulation of TBs in the collaborative network of geocaching attends to recent calls for a

systemic approach to value creation (Akaka et al. 2014; Vargo and Lusch 2011) and to claims that a “systemic approach to value creation is essential in an increasingly interconnected and dynamic world” (Vargo and Lusch 2011, 182). The process of value creation through circulation identified in this study is systemic because (1) its various elements (actions, objects, and participants) are interdependent; (2) it is an all-inclusive process (anyone can join, building on the collaborative nature of the network); (3) it is self-adjusting (each iteration of the process changes the context for the next); (4) it links individual action to collective outcomes; and (5) it integrates the various types of value forms produced in it (potential value, indexical value, value outcomes, and microcultural values). Of note, although the four subprocesses we identified seem sequential when analyzed from the point of view of a single circulating object, they happen concomitantly and throughout the simultaneous circulation of multiple TBs, which potentializes the systemic nature of value creation in the collaborative network of geocaching. In the following paragraphs, we reflect on the implications of the systemic nature of the circulation-centric process to understanding collective value creation.

Studies of value co-creation suggest that resource integration is a central process in value co-creation (Akaka and Chandler 2011; Vargo and Lusch 2011). We expand this argument by showing that object circulation can be a powerful avenue for resource integration because it creates multiple relationships of dependence among heterogenous actors, their actions, and the outcome of these actions. Circulation also invites a look into how objects and their characteristics play a role in integrating resources in systemic value creation. Akaka et al. (2014) discuss the role of symbols (understood as signs connected to practices and institutionally embedded) in coordinating “interaction, the communication of information, the integration of resources, and the evaluation of value, among actors” (1) in a network. Akaka et al. (2014) note, however, that for symbols to operate as integrators of value co-creation, “effective coordination as well as the articulation and communication of potential value (i.e., value propositions)” (12) are critical. Akaka et al. (2014) found that such coordination in a service system presupposes certain hierarchical arrangements among brand managers, manufacturers, suppliers, retailers, and consumers. Our findings challenge the need for central coordination highlighted in prior research by demonstrating that object circulation integrates value-creating actions in collaborative consumer networks that are not centrally managed or hierarchically organized. Specifically, our findings demonstrate that circulating objects act as repositories of indexical value, integrating multiple value-creating actions enacted independently by participants across time and space, and aligning the value forms generated by these actions to the microcultural values of the collaborative network.

Furthermore, object circulation integrates resources systematically because it links individual action to collective outcomes. Vargo and Lusch (2011) note that “ironically we must move toward a more macro, systemic view of generic actors in order to see more clearly how a single, specific actor . . . can participate more effectively” (182). Circulation allows us to understand the participation of each individual in creating value for the network while integrating individual activity and perception (value-creating actions and individual assessments) with collaboratively created value outcomes and microcultural values.

Through circulation, TBs collect physical marks and registers on their online profiles, accumulating the indexical value created through multiple actions in the network and allowing for assessments of value outcomes to occur. Specifically, we identified three types of value outcomes being systemically created for participants in the collaborative network of geocaching: hedonic, epistemic, and linking value. Our findings suggest that these systemic outcomes are related directly to object circulation; hence should more objects circulate within the geocaching network, or should existing TBs circulate more, more of such value outcomes could be generated. Indeed, data on TBs that circulated extensively indicate that these objects accumulate more indexical value, often inspire more interesting collaborative stories, are connected more directly to multiple participants, and are more likely to bring novel information and experiences to participants in the network. Indexical relationships have been described extensively in consumer studies (Grayson and Martinec 2004; Grayson and Schulman 2000; Oswald 1999) in relation to objects that serve as mementos for key events or relationships in consumers’ life narratives (Ahuvia 2005; Curasi, Price, and Arnould 2004). Extending this line of research, we have found that, in object circulation, indexical cues work in a similar way, but instead of linking material evidence to key life events and relationships, they link circulating objects to value-creating actions and their value potential and thus play a critical role in systemic value creation.

During the entire process of systemic value creation, the value created by actions undergoes changes in form. Initially, value emerges as a potential (field of possibilities). Then, value becomes indexical, acquiring different properties (storability and durability). Finally, it becomes a value outcome of various types (e.g., hedonic, epistemic, and linking), ultimately assuming the form of microcultural values. The process of systemic value creation shows how these forms of value integrate and shape each other. This transmogrification of value is key to explain how value-creating actions performed at the individual level generate value outcomes and values for the entire network. By evidencing the link between the individual and collective levels of value creation, the systemic framework advanced in this study integrates previous literature on consumer value creation and value outcomes. For example, our

findings show that actions create outcomes (Munn 1986; Schau et al. 2009), which can then be assessed as valuable (Holbrook 1999; Zeithaml 1988) by networked participants. Individual value assessments (Chen 2009) are often supported by the microcultural values guiding participants (Thompson and Troester 2002) and yield different types of value outcomes (Babin et al. 1994; Sheth et al. 1991; Venkatesh and Peñaloza 2014). By describing the process by which value outcomes and value creation are connected, we not only empirically demonstrate Graeber's (2001) argument that value (i.e., value outcomes) and values (i.e., microcultural values) are linked fundamentally as a measure of importance for an individual and for the collective, but we also address Gummerus's (2013) concern that "the interrelationship between value creation and value perceptions remains understudied" (20).

The discussion on systemic value creation in collaborative networks brings to light certain limitations of the community-based approach to value creation. Because it focuses on community building (Holt 1995; Schau et al. 2009) and identity value (Cova and Pace 2006; Muñiz and O'Guinn 2001; Schouten and McAlexander 1995), the community approach to value creation fails to capture consumer activity that is not related to enhancing a sense of communal belonging or identity building but nevertheless contributes to value creation. In contrast, our network-based approach to value creation allows us to attend to any actions in which consumers engage as they attempt to advance their goals within the network. As our findings show, each of these actions triggers the systemic process of value creation, and most will ultimately produce value outcomes.

The detailing of the process of systemic value creation also highlights the limitation of studies of value creation based on practice theory. Although both the systemic value creation developed here and the practice approach developed by Schau et al. (2009) focus on actions as the initial sources of value, the practice approach excludes from the value-creating process actions that are not routinized. Schau et al. (2009) note that "[p]ractices structurally add value by making actions reproducible and repeatable" (40). Our findings demonstrate how individual enactments of what may be onetime and haphazard actions also contribute to create value systemically. In this sense, the process we describe is broader because it encompasses not only practices but also all value-creating actions enacted by those participants who may have joined a network only momentarily and who may not acknowledge "explicit procedures for doing" or possess "taken-for-granted knowledge of worthy projects," or share "affective commitments" to those practices (Schau et al. 2009, 40). Indeed, our study highlights the value-creating potential of the doings of all participants—even nonhuman ones. Recall the case of the Spirit of Ozzie the Osprey Love Doll discussed in the findings section, which shows that, when a

bird takes a blue plush bear to its nest, that action generates potential value and triggers the systemic process of value creation in the network.

Our network-based, circulation-centric view of value creation provides a framework for thinking and understanding how value is created systemically in other collaborative networks where circulation matters. Networks of interest to consumer researchers, such as Napster (circulation of music files), BookCrossing (circulation of books), Couchsurfing (circulation of traveling participants), and HitRecord (circulation of digital music, video, and art), can be fruitful contexts in which to examine the boundary conditions of the systemic process of value creation identified here. We suggest that circulation can connect value-creating actions, enabling consumers with only fleeting connections to a network (as is the case with many consumers networked through platform-based business models) to collaborate and create value outcomes that are beneficial to themselves and the entire network.

Consider Airbnb, where both people (guests) and objects (online profiles for guests, hosts, and accommodations) circulate. It is likely that the circulation of people and objects creates interdependencies among multiple value-creating actions occurring in that network (e.g., preparing the home for the next guest, uploading pictures of the home into its profile, and making and responding to reservations). Online profiles of objects and people may accumulate indexical value through registrations, such as review ratings, feedback, and stories posted on them. Indexical value contained in these online profiles may then be assessed by any consumer who browses through them. We believe that by observing the systemic process of value creation in a collaborative consumer network such as Airbnb, which differs from geocaching in several aspects, researchers can answer further questions about circulation and the subprocesses of systemic value creation.

We particularly call for research that examines what kinds of actions and registrations are more conducive to systemic value creation. For instance, can customer ratings, reviews, and narratives similarly be assessed as indexical cues for the value potential they objectify? Recent research has proposed that ratings and reviews facilitate value assessment for consumers (de Langhe, Fernbach, and Lichtenstein 2016) and also has suggested that these registrations can be entertaining and socially inclusive, serving multiple individualized consumer needs (Kozinets 2016). Examining ratings and reviews as elements in the process of value creation can extend these understandings. Moreover, given that narratives are known for their power to enhance readers' affective and cognitive responses (Van Laer et al. 2014), can it be that storied forms of indexical value are more likely to generate value outcomes than nonstoried ones?

Future research should also consider the extent to which making assessments such as narratives and reviews explicit and widely accessible via circulation can enhance the

microcultural values of consumer networks and “collectively produce, change and reproduce moral ordering through (culturally mediated) interaction” (Eden 2015, 5). This potentially could catalyze the formation of community-like structures around the reviewed product or brand (Muñiz and Schau 2005). Further work also is called for to examine whether differences regarding what circulates (e.g., objects vs. people) and how circulation unfolds in a collaborative consumer network influence the systemic process of value creation or any of its subprocesses. Overall, a focus on the circulation of objects in such collaborative networks creates opportunities for consumer researchers interested in themes related to value creation, network formation, resource distribution among networked participants, consumers’ self-organization for collaboration, emergent tactics for conflict resolution, and the development of microcultural values, among other issues.

Systemic Creation of Value Beyond Circulation

Even though we adopted a circulation-centered framework to evidence systemic value creation, it is likely that the systemic process we identify in this study is applicable to consumer networks that are not centered on object circulation. In such networks, the integrative role of circulation is likely to be assumed by another mechanism. For example, Thomas et al. (2013) found that consumers who participate in networks dedicated to the activity of running become interdependent through the mutual use of resources and by engaging in various frame alignment practices. In examining a network assembled around the blog Apartment Therapy, Arsel and Bean (2013) found that objects and consumers’ actions become interdependent through the integrative discursive practices of taste regimes. Pongsakornrungrasit and Schroeder (2011) demonstrated that football fans establish relationships of codependency through role switching in fandom websites where consumer providers transfer knowledge to consumer beneficiaries. In all these cases, systemic value creation is likely to be enabled by mechanisms other than circulation, but there is no reason to believe that the subprocesses of value creation that our study identifies could not be identified in these contexts.

For example, we believe that it is possible to examine how the value-creating actions of participants in the Apartment Therapy network generate value potential and verify whether this potential is transvalued into the Apartment Therapy blog. The blog itself may be the object in which the indexical value generated by multiple enactments of individual actions is stored and then collaboratively assessed by other members. The taste regime Arsel and Bean (2013) describe operate as an aggregate set of microcultural values linked to Soft Modernism that emerge from interactions among networked participants and that help determine the value outcomes members derive from the network when assessing theirs and other participants’

actions. Through the layering of the systemic process of value creation over existing understandings of these collaborative networks, deeper insights can be gained regarding how networked consumers coordinate efforts toward achieving common social and economic goals.

Consumers and Circulating Objects

In addition to advancing understanding of value creation by consumers, our focus on object circulation allows this study to contribute to a recent stream of consumer research that compares the outcomes of consumer relations with digital and physical consumption objects (Bettany, Kerrane, and Hogg 2014; Denegri-Knott, Watkins, and Wood 2012; Kedzior 2015; Watkins, Denegri-Knott, and Molesworth 2016). TBs are partly physical (tag with object attached to it) and partly digital (online profile) objects, and we noticed how both characteristics are important for creating indexical value for circulating objects and influencing the storability and durability that TBs afford. Through their digital–material properties, TBs aggregate and preserve registers of multiple value-creating actions performed in the collaborative network by a large number of participants.

Similar indexical capacities have been attributed to digital objects such as virtual houses, avatars, and cars that exist within video games and virtual worlds (Denegri-Knott et al. 2012), but just like research that explains the indexicality of physical objects (Grayson and Schulman 2000), research on the indexical role of digital objects has described it in individual terms (i.e., as a materialization of a consumer’s past actions related to an object). The systemic view advanced here can support examinations of the role of digital and physical objects as repositories of value created collaboratively at the collective level. Multiple consumers can act upon and interact with a circulating objects that embed and carry the indexical value produced by all such actions and interactions. We speculate that disentangling the roles of digital and physical components of circulating objects can lead to relevant insights on the operation of indexicality and on its consequences for the establishment of relationships between consumers and the objects involved in collaborative value creation.

Our focus on object circulation and its consequences also reinforces recent developments in materiality research that consider the agency of objects (Borgerson 2013). This stream of research sees physical and digital objects as capable of producing effects or “provocations to interpretations” (Drucker 2009, 13). The various objects we found circulating without the help of human participants (like the Spirit of Ozzie) evidence this type of agency. Provocations by objects also are found in the manner in which value stored in objects shapes value outcomes and microcultural values in the collaborative network. We also have demonstrated how the material characteristics of objects can provoke not only interpretations but also the actions that are

performed with them. As discussed in the findings section, the size, weight, shape, and aesthetics of TBs can shape these objects' circulation and, consequently, value creation in the collaborative network of geocaching. Similarly, the format of digital objects (e.g., the design of TB profiles) can help valorize their goals and contains prompts to action that shape how these objects are transferred among participants. Thus our findings empirically support and advance research on the role of objects as agents in consumer networks (Bajde 2013; Epp and Price 2010; Kuruoğlu and Ger 2014) by demonstrating that this role is critical to the integrative effects of object circulation and its promotion of valuable outcomes at the collective level.

How Geographic Dispersion Can Coexist with the Cultural Situatedness of Value Creation

Our study also extends anthropological theories of value by updating them to account for value creation in contemporary collaborative networks. First, anthropological accounts of value creation have tended to focus on value creation in localized contexts (Graeber 2001; Mauss 1954; Munn 1980) that do not explain how value creation simultaneously can be embedded in culture and globally distributed. By analyzing a context of value creation that is global, multi-sited, and platform mediated, with both on-line and offline aspects, we are able to maintain the situated focus of anthropology in a microcultural context while attending to the pressing need to explain the loosely organized and geographically disperse structures and an emergent set of values that needs to be dynamically negotiated among participants. In particular, by adopting a focus on circulation and developing its role in the subprocesses of enactment, transvaluation, assessment, and alignment, we are able to explain how geographic dispersion can coexist with the cultural situatedness of value creation. In doing so, we update anthropological notions of value creation through action and pave the way for their application to understanding value creation in other collectives that are globally dispersed and generate value systemically, such as temporary tribes (Cova, Kozinets, and Shankar 2007; Goulding, Shankar, and Canniford 2013) and markets centered on platform-based business models (Choudary et al. 2016; Mozorov 2015; Olma 2014).

Although the purpose of this article is to explain how circulation promotes the systemic creation of value in collaborative networks, much can be gained from thinking broadly and examining how circulation promotes systemic value creation in other geographically dispersed collectives beyond the realm of collaborative consumer networks. The global art market, for instance, has several examples of circulation leading to the systemic creation of value. An artwork circulates widely as it is transferred among various owners and different modes of consumption—it can be purchased, gifted, rented, traded, loaned, or stolen (Geary

1986). The artwork's circulation connects value-creating actions of all sorts, performed by institutional agents, such as art creators, dealers, galleries, and auctions houses, in addition to consumers (Steiner 1994 offers a detailed description of the circulation path of an art object). If registries of these actions are kept, the art object accumulates indexical value. Indeed, research shows that there is a close relationship between the value of artworks and their indexical value (Gell 1998). We conjecture that the indexical value stored in the circulating object is likely to be translated into a higher selling price in auctions. In addition, indexical value is expected to yield value outcomes to those who come to access or possess the object and its collaborative history of circulation. Hence a circulation-centric approach to value creation could be employed beyond consumer collectives to understand value creation at the collective level in market systems and institutional fields.

Finally, although participants themselves register the circulation of TBs in this study, we note that researchers do not need to rely only on spontaneous registrations of value-creating actions to track the circulation of objects. Consider the opportunities afforded by technological developments that allow researchers to track objects as they circulate both in physical and digital spaces through, for instance, computer cookies, digital object identifiers (DOIs), barcodes, quick response (QR) codes, GPS signals, radiofrequency identification (RFID), and Internet Protocols (IPs). Mapping the circulation of objects may help researchers identify multiple pathways through which value-creating actions become interconnected. Fine-grained data may support in-depth understandings of how individual performances enacted by specific participants and contextualized in time and space contribute to the systemic creation of value for a collective. We call for future research that looks at the role of tracking technologies in registering actions related to circulating objects and that examines the role of these technologies in the generation of indexical value and value outcomes for consumer collectives. We believe such research is important for our field as collaborative consumer networks, and similar contexts gain prominence in contemporary cultures and economies. Consumer researchers can be at the forefront of research that theorizes value creation in platform and crowd-based capitalism (Choudary et al. 2016; Sundararajan 2016), thereby making relevant contributions to other disciplines in which scholars also are concerned with creative and productive activity that happens at the collective level.

DATA COLLECTION INFORMATION


The second author conducted online and offline fieldwork herself from June 2008 until November 2013. Participant observation data were collected mostly in the Greater Toronto Area and other areas of Ontario, Canada. Data were also

collected during brief fieldwork incursions in various cities in the United States. The second author interviewed Canadian informants in person (one telephonic interview excepted), and American informants via Skype. Additional

data were collected online by both authors from 2013 to 2015. Both authors analyzed the relevant subset of data with the assistance of the qualitative data analysis application Dedoose.

Appendix: The Online Profile of The ACME Thunderer

The ACME Thunderer

Owner: [polarbear_dave](#)  Message this owner

Released: Wednesday, 12 December 2007

Origin: Quebec, Canada

Recently Spotted: [In CERNY VRCH / THE BLACK HILL](#)



The owner hasn't set their collectible preference.

Use **TB1QY4K** to reference this item.

[First time logging a Trackable? Click here.](#)

Current GOAL
This old sports whistle needs to make it back to England where it was made. It would be a hoot if it could be used at a soccer match for atleast one play and then come back to Canada. Although it could be well traveled anywhere as long as it made it to some sporting events.











About This Item
This is an old whistle that was used at Canadian amature hockey games in the 1960's. It still has the original cork ball inside. It isn't as loud as a 'Fox 40' but there is alot of sports history behind it.

Gallery Images related to The ACME Thunderer
 [At the races](#)
 [G:\Geocaching.GPS\Photos\The ACME Thunderer TB.jpg](#)


[View All 16 Gallery Images](#)


Tracking History (15523.6km) [View Map](#)


01-10 of 395 records - [01](#) [02](#) [03](#) [04](#) [05](#) [06](#) [next >](#) [last >](#)


	11/27/2015	Codyack 11 discovered it seen it virtualy		Visit Log
	01/20/2015	cabadaj1 discovered it dik		Visit Log
	03/01/2014	Venlens placed it in CERNY VRCH / THE BLACK HILL	Hlavni mesto Praha, Czech Republic - 79.18 km	Visit Log
	02/27/2014	Venlens took it to Decinske-mosty#1-Zepomenuty-most	Ustecky kraj, Czech Republic - 138.48 km	Visit Log
	02/22/2014	Venlens retrieved it from Lesni poklady #6 Jehliste A good and old TB!	Stredocesky kraj, Czech Republic	Visit Log
	02/21/2014	Beerius discovered it Discovered it in Lesni Tajemstvi #6: Jehliste cache. Thanks!.		Visit Log
	02/20/2014	kotrdienec placed it in Lesni poklady #6 Jehliste	Stredocesky kraj, Czech Republic - 15.54 km	Visit Log
	02/19/2014	kotrdienec took it to Mustice	Jihocesky kraj, Czech Republic - 10.49 km	Visit Log
	02/19/2014	kotrdienec took it to Kamenna Lhota	Jihocesky kraj, Czech Republic - 20.69 km	Visit Log
	02/15/2014	kotrdienec retrieved it from Kladrubska hora nice one :-)	Jihocesky kraj, Czech Republic	Visit Log

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REFERENCES

- Ahuvia, Aaron C. (2005), "Beyond the Extended Self: Loved Objects and Consumers' Identity Narratives," *Journal of Consumer Research*, 32 (1), 171–84.
- Akaka, Melissa A. and Jennifer D. Chandler (2011), "Roles as Resources: A Social Roles Perspective of Change in Value Networks," *Marketing Theory*, 11 (3), 243–60.
- Akaka, Melissa A., Daniela Corsaro, Carol Kelleher, Paul P. Maglio, Yuri Seo, Robert F. Lusch, and Stephen L. Vargo (2014), "The Role of Symbols in Value Cocreation," *Marketing Theory*, 14 (3), 311–26.
- Akaka, Melissa Archpru, Stephen L. Vargo, and Robert F. Lusch (2012), "An Exploration of Networks in Value Cocreation: A Service-Ecosystems View," *Review of Marketing Research*, 9 (Special Issue), 13–50.
- Appadurai, Arjun, ed. (1986), *The Social Life of Things: Commodities in Cultural Perspective*, Cambridge, UK: Cambridge University Press.
- Arnould, Eric J. (2014), "Rudiments of a Value Praxeology," *Marketing Theory*, 14 (1), 129–33.
- Arsel, Zeynep and Jonathan Bean (2013), "Taste Regimes and Market-Mediated Practice," *Journal of Consumer Research*, 39 (5), 899–917.
- Babin, Barry J., Mitch Griffin, and Laurie Babin (1994), "The Effect of Motivation to Process on Consumers' Satisfaction Reactions," in *Advances in Consumer Research*, Vol. 21, ed. Chris T. Allen and Deborah Roedder John, Provo, UT: Association for Consumer Research, 406–11.
- Bajde, Domen (2013), "Consumer Culture Theory (Re) Visits Actor-Network Theory Flattening Consumption Studies," *Marketing Theory*, 13 (2), 227–42.
- Belk, Russell W. (2013), "Extended Self in a Digital World," *Journal of Consumer Research*, 40 (3), 477–500.
- Belk, Russell W., Melanie Wallendorf, and John F. Sherry Jr. (1989), "The Sacred and the Profane in Consumer Behavior: Theodicy on the Odyssey," *Journal of Consumer Research*, 16 (1), 1–38.
- Benkler, Yochai (2006), *The Wealth of Networks: How Social Production Transforms Markets and Freedom*, New Haven, CT: Yale University Press.
- Bettany, Shona M., Ben Kerrane, and Margaret K. Hogg (2014), "The Material Semiotics of Fatherhood: The Co-emergence of Technology and Contemporary Fatherhood," *Journal of Business Research*, 67, 1544–51.
- Borgerson, Janet L. (2013), "The Flickering Consumer: New Materialities and Consumer Research," *Research in Consumer Behavior*, 15 (1), 125–44.
- Botsman, Rachel and Roo Rogers (2010), *What Is Mine Is Yours: The Rise of Collaborative Consumption*, New York: Harper Business.
- Chen, Yu (2009), "Possession and Access: Consumer Desires and Value Perceptions Regarding Contemporary Art Collection and Exhibit Visits," *Journal of Consumer Research*, 35 (6), 925–40.
- Choudary, Sangeet Paul, Marshall W. Van Alstyne, and Geoffrey G. Parker (2016), *Platform Revolution: How Networked Markets Are Transforming the Economy—And How to Make Them Work for You*, New York: Norton.
- Corneo, Giacomo and Olivier Jeanne (1997), "Snobs, Bandwagons, and the Origin of Social Customs in Customer Behaviour," *Journal of Economic Behavior and Organization*, 32, 333–47.
- Cova, Bernard (1997), "Community and Consumption: Towards a Definition of the 'Linking Value' of Product or Services," *European Journal of Marketing*, 31 (3/4), 297–316.
- Cova, Bernard and Stefano Pace (2006), "Brand Community of Convenience Products: New Forms of Customer Empowerment—The Case 'My Nutella the Community,'" *European Journal of Marketing*, 40 (9/10), 1087–1105.
- Cova, Bernard and Tim White (2010), "Counter-Brand and Alter-Brand Communities: The Impact of Web 2.0 on Tribal Marketing Approaches," *Journal of Marketing Management*, 26 (3–4), 256–70.
- Cova, Bernard and Veronique Cova (2002), "Tribal Marketing: The Tribalisation of Society and Its Impact on the Conduct of Marketing," *European Journal of Marketing*, 36 (5/6), 595–620.
- Cova, Bernard, Robert Kozinets, and Avi Shankar (2007), *Consumer Tribes*, Burlington, MA: Butterworth Heinemann.
- Curasi, Carolyn F., Linda L. Price, and Eric J. Arnould (2004), "How Individuals' Cherished Possessions Become Families' Inalienable Wealth," *Journal of Consumer Research*, 31 (3), 609–22.
- De Langhe, Bart, Philip M. Fernbach, and Donald R. Lichtenstein (2016), "Navigating by the Stars: Investigating the Actual and Perceived Validity of Online User Ratings," *Journal of Consumer Research*, 42 (April), 817–33.
- Denegri-Knott, Janice, Rebecca Watkins, and Joseph Wood (2012), "Transforming Digital Virtual Goods into Meaningful Possessions," in *Digital Virtual Consumption*, ed. Mike Molesworth and Janice Denegri-Knott, Oxford, UK: Routledge, 76–91.
- Drucker, Johanna (2009), "Entity to Event: From Literal, Mechanistic Materiality to Probabilistic Materiality," *Parallax*, 15 (4), 7–17.
- Eden, Sally (2015), "Blurring the Boundaries: Prosumption, Circularity and Online Sustainable Consumption Through Freecycle," *Journal of Consumer Culture*, 1–21. Published online before print May 28, 2015, doi: 10.1177/1469540515586871.
- Epp, Amber M. and Linda L. Price (2010), "The Storied Life of Singularized Objects: Forces of Agency and Network Transformation," *Journal of Consumer Research*, 36 (5), 820–37.
- Fernandez, Karen V. and John L. Lastovicka (2011), "Making Magic: Fetishes in Contemporary Consumption," *Journal of Consumer Research*, 37 (2), 278–99.
- Fetterman, David M., ed. (2010), *Ethnography: Step-by-Step*, Vol. 17, Thousand Oaks, CA: Sage.
- Foster, Robert J. (2008), "Commodities, Brands, Love and Kula Comparative Notes on Value Creation in Honor of Nancy Munn," *Anthropological Theory*, 8 (1), 9–25.
- Geary, Patrick (1986), "Sacred Commodities: The Circulation of Medieval Relics," in *The Social Life of Things: Commodities in Cultural Perspective*, ed. Arjun Appadurai, Cambridge, UK: Cambridge University Press.
- Gell, Alfred (1998), *Art and Agency: An Anthropological Theory*, Oxford, UK: Clarendon Press.
- Giesler, Markus (2006), "Consumer Gift System: Netnographic Insights from Napster," *Journal of Consumer Research*, 33 (September), 283–90.
- Goulding, Christina, Avi Shankar, and Robin Canniford (2013), "Learning to Be Tribal: Facilitating the Formation of Consumer Tribes," *European Journal of Marketing*, 47 (5/6), 813–32.
- Graeber, David (2001), *Toward an Anthropological Theory of Value: The False Coin of Our Own Dreams*, New York: Palgrave Macmillan.

- Grayson, Kent and Radan Martinec (2004), "Consumer Perceptions of Iconicity and Indexicality and Their Influence on Assessments of Authentic Market Offerings," *Journal of Consumer Research*, 31 (2), 296–312.
- Grayson, Kent and David Shulman (2000), "Indexicality and the Verification Function of Irreplaceable Possessions: A Semiotic Analysis," *Journal of Consumer Research*, 27 (1), 17–30.
- Groundspeak (2014), "The History of Geocaching," <http://www.geocaching.com/about/history.aspx>.
- (2015), "Geocaching," <http://www.geocaching.com/>
- Gummerus, Johanna (2013), "Value Creation Processes and Value Outcomes in Marketing Theory: Strangers or Siblings?" *Marketing Theory*, 13 (1), 19–46.
- Hartmann, Benjamin J., Caroline Wiertz, and Eric J. Arnould (2015), "Exploring Consumptive Moments of Value-Creating Practice in Online Community," *Psychology & Marketing*, 32 (3), 319–40.
- Hoffman, Donna L. and Thomas P. Novak (1996), "Marketing in Hypermedia Computer-Mediated Environments: Conceptual Foundations," *Journal of Marketing*, 60 (3), 50–68.
- Holbrook, Morris B., ed. (1999), *Consumer Value: A Framework for Analysis and Research*, New York: Routledge.
- Holt, Douglas B. (1995), "How Consumers Consume: A Typology of Consumption Practices," *Journal of Consumer Research*, 22 (1), 1–16.
- Jenkins, Henry, Sam Ford, and Joshua Green (2013), *Spreadable Media: Creating Value and meaning in a networked culture*. NYU Press.
- Karababa, Eminegül and Dannie Kjeldgaard (2014), "Value in Marketing: Toward Sociocultural Perspectives," *Marketing Theory*, 14 (1), 119–27.
- Kedzior, Richard (2015), "Digital Materiality—a Phenomenological Exploration," in *Advances in Consumer Research*, Vol. 43, ed. Kristin Diehl and Carolyn Yoon, Duluth, MN: Association for Consumer Research, 275–81.
- Kopytoff, Igor (1986), "The Cultural Biography of Things: Commoditization as Process," in *Story of Objects. The Social Life of Things: Commodities in Cultural Perspective*, ed. Arjun Appadurai, Cambridge, MA: Cambridge University Press, 64–91.
- Kozinets, Robert V. (2015), *Netnography Revisited. Doing Ethnographic Research Online*, 2nd ed., London: Sage.
- (2016), "Amazonian Forests and Trees: Multiplicity and Objectivity in Studies of Online Consumer-Generated Ratings and Reviews, A Commentary on de Langhe, Fernbach, and Lichtenstein," *Journal of Consumer Research*, 42 (April): 834–39.
- Kuruoğlu, Alev P. and Güliz Ger (2015), "An Emotional Economy of Mundane Objects," *Consumption Markets & Culture*, 18 (3), 1–30.
- Lambek, Michael (2013), "The Value of (Performative) Acts," *HAU: Journal of Ethnographic Theory*, 3 (2), 141–60.
- Larsen, Jonas, Kay W. Axhausen, and John Urry (2006), "Geographies of Social Networks: Meetings, Travel and Communications," *Mobilities*, 1 (2), 261–83.
- Leach, Jerry W. and Edmund Leach (1983), *The Kula: New Perspectives on Massim Exchange*, CUP Archive, May 19, 1983.
- Levi-Strauss, Claude (1966), *The Savage Mind*, trans. John Weightman and Doreen Weightman. Chicago: University of Chicago Press.
- Magaudda, Paolo (2011), "When materiality 'bites back': Digital music consumption practices in the age of dematerialization." *Journal of Consumer Culture*, 11 (1): 15–36.
- Malinowski, Bronislaw (1922), *Argonauts of the Western Pacific*, New York: Dutton
- Marcus, George E. (1995), "Ethnography in/of the World System: The Emergence of Multi-Sited Ethnography," *Annual Review of Anthropology*, 24 (1), 95–117.
- Mathwick, Charla, Caroline Wiertz, and Ko De Ruyter (2008), "Social Capital Production in a Virtual P3 Community," *Journal of Consumer Research*, 34 (6), 832–49.
- Mauss, Marcel (1954), *The Gift: Forms and Functions of Exchange in Primitive Societies*, London: Cohen and West.
- Miller, Daniel (1987), *Material Culture and Mass Consumption*, Oxford, UK: Blackwell.
- Mozorov, Evgeny (2015), "Where Uber and Amazon Rule: Welcome to the World of the Platform," *The Guardian*, E-commerce Observer, Sunday, June 7, 2015, <https://www.theguardian.com/technology/2015/jun/07/facebook-uber-amazon-platform-economy>.
- Muniz, Albert M., and Hope Jensen Schau (2005), "Religiosity in the abandoned Apple Newton brand community" *Journal of Consumer Research*, 31 (4), 737–47.
- Muñiz Albert M. Jr. and Thomas C. O'Guinn (2001), "Brand Community," *Journal of Consumer Research*, 27 (4), 412–32.
- Munn, Nancy (1986), *The Fame of Gawa: A Symbolic Study of Value Transformation in a Massim Society*, Cambridge, UK: Cambridge University Press.
- Newman, George E., Gil Diesendruck, and Paul Bloom (2011), "Celebrity Contagion and the Value of Objects," *Journal of Consumer Research*, 38 (2), 215–28.
- Olma, Sebastian (2014), "Never Mind the Sharing Economy: Here's Platform Capitalism," *Institute of Networked Cultures*, <http://networkcultures.org/mycreativity/2014/10/16/never-mind-the-sharing-economy-heres-platform-capitalism/>.
- Oswald, Laura R. (1999), "Culture Swapping: Consumption and the Ethnogenesis of Middle-class Haitian Immigrants," *Journal of Consumer Research*, 25 (4), 303–18.
- Otto, Ton and Rane Willerslev (2013a), "Introduction. Value as Theory: Comparison, Cultural Critique, and Guerrilla Ethnographic Theory," *HAU: Journal of Ethnographic Theory*, 3 (1), 1–20.
- (2013b), "Prologue. Value as Theory: Value, Action, and Critique," *HAU: Journal of Ethnographic Theory*, 3 (2), 1–10.
- Parsons, Liz (2008), "Thompsons' Rubbish Theory: Exploring the Practices of Value Creation," *European Advances in Consumer Research*, 8, 390–93.
- Peirce, Charles Sanders and Nathan Houser, eds. (1998), *The Essential Peirce: Selected Philosophical Writings*, Vol. 2, Bloomington: Indiana University Press.
- Pongsakornrungrasit, Siwarit and Jonathan E. Schroeder (2011), "Understanding Value Co-creation in a Co-consuming Brand Community," *Marketing Theory*, 11 (3), 303–24.
- Reckwitz, Andreas (2002), "Toward a Theory of Social Practices: A Development in Culturalist Theorizing," *European Journal of Social Theory*, 5 (2), 243–63.
- Scaraboto, Daiane (2015), "Selling, Sharing, and Everything in Between: The Hybrid Economies of Collaborative Networks," *Journal of Consumer Research*, 42 (1), 156–76.

- Schatzki, Theodore R. (2010), *Site of the Social: A Philosophical Account of the Constitution of Social Life and Change*, University Park: Penn State University Press.
- Schau, Hope J., Albert M. Muñoz Jr., and Eric J. Arnould (2009), "How Brand Community Practices Create Value," *Journal of Marketing*, 73 (5), 30–51.
- Schouten, John W. and James H. McAlexander (1995), "Subcultures of Consumption: An Ethnography of the New Bikers," *Journal of Consumer Research*, 22 (1), 43–61.
- Sherry John F. Jr. (1983), "Gift Giving in Anthropological Perspective," *Journal of Consumer Research*, 10 (2), 157–68.
- Sheth, Jagdish N., Bruce I. Newman, and Barbara L. Gross (1991), "Why We Buy What We Buy: A Theory of Consumption Values," *Journal of Business Research*, 22 (2), 159–70.
- Steiner, Christopher B (1994), *African art in transit*. Cambridge, UK: Cambridge University Press.
- Steiner, Christopher B. (1995), "The Art of the Trade: On the Creation of Value and Authenticity in the African Art Market," in *The Traffic in Culture: Refiguring Art and Anthropology*, ed. George Marcus and Fred R. Myers, Oakland: University of California Press, 151–65.
- Sundararajan, Arun (2016), *The Sharing Economy: The End of Employment and the Rise of Crowd-Based Capitalism*, Boston: MIT Press.
- Thomas, Tandy Chalmers, Linda L. Price, and Hope Jensen Schau (2013), "When Differences Unite: Resource Dependence in heterogeneous Consumption Communities," *Journal of Consumer Research*, 39 (5), 1010–33.
- Thompson, Michael (1979), *Rubbish Theory*. Oxford, UK: Oxford University Press.
- Thompson, Craig J. and Maura Troester (2002), "Consumer Value Systems in the Age of Postmodern Fragmentation: The Case of the Natural Health Microculture," *Journal of Consumer Research*, 28 (4), 550–71.
- Van Laer, Tom, Ko De Ruyter, Luca M. Visconti, and Martin Wetzels (2014), The Extended Transportation-Imagery Model: A Meta-Analysis of the Antecedents and Consequences of Consumers' Narrative Transportation, *Journal of Consumer Research*, 40 (5), 797–817.
- Vargo, Stephen L. and Robert F. Lusch (2011), "It's all B2B . . . and Beyond: Toward a Systems Perspective of the Market," *Industrial Marketing Management*, 40 (2), 181–87.
- Venkatesh, Alladi and Lisa Peñaloza (2014), "The Value of Value in CCT," *Marketing Theory*, 14 (1), 135–38.
- Watkins, Rebecca, Janice Denegri-Knott, and Mike Molesworth (2016), "The Relationship Between Ownership and Possession: Observations from the Context of Digital Virtual Goods," *Journal of Marketing Management*, 32 (1–2), 44–70.
- Weinberger, Michelle F. and Melanie Wallendorf (2012), "Intracommunity Gifting at the Intersection of Contemporary Moral and Market Economies," *Journal of Consumer Research*, 39 (1), 74–92.
- Weiner, Annette B. (1992), *Inalienable Possessions: The Paradox of Keeping-While Giving*, Oakland: University of California Press.
- Zeithaml, Valarie A. (1988), "Consumer Perceptions of Price, Quality, and Value: A Means-end Model and Synthesis of Evidence," *Journal of Marketing*, 52 (3), 2–22.