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User Self-Destruction: Theorizing Behavioral Transitions from Cognitive Absorption to Cognitive Discharge

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Online Community User Self-Destruction: Theorizing Behavioral Transitions from Cognitive Absorption to Cognitive Discharge

Research-in-Progress

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Abstract

Individual online community (OC)users sometimes withdraw their OC membership in destructive ways. In our study, we observe an interesting phenomenon in which many OC highly respected users delete all their posts when leaving the OC. Why do online community users self-destruct upon departure? In this research-in-progress paper, we propose a theoretical reversal of cognitive absorption that not only induces an individual user to participate excessively in the OC activities, but also to strongly bond with their participation. This bond is such that, upon deciding to withdraw from the OC, the user proactively removes all traces of their participation. It is a process of cognitive discharge, *a reversal of cognitive absorption such that the user destroys his/her presence in the OC. In a cognitive discharge, the user works meticulously and extensively to delete all posts and user accounts. Effectively the user is* firing *the OC. To examine this theory, we plan to conduct a longitudinal case study of China's biggest online automobile community – Autohome.com. The study results will have both theoretical and practical implications.*

Keywords: *dynamic view of cognitive absorption, knowledge collaboration, users' self-destructive behaviors*

Introduction

Knowledge collaboration is broadly defined as the sharing, transfer, accumulation, transformation, and co-creation of knowledge (Faraj et al. 2011). It is the essential activity in order for an online community (OC) to generate resources and achieve sustainability (Butler 2001). The OC is a highly flexible and voluntary resource-system that can bring together a large population of individuals, who are not necessarily known and identifiable, in order to work on an overarching goal (Faraj et al. 2016; Faraj and Johnson 2011; Mindel et al. 2018). On the one hand, the flexibility of an OC makes large-scale knowledge collaboration possible (Faraj et al. 2011). On the other hand, the flexibility also creates an uncertain participation environment (Faraj et al. 2011) where its users may leave the community when additional participation is undesired.

Indeed, motivating and retaining existing OC users is always challenging, and many studies show that OC user engagement will eventually decline. One possible explanation is that the OC's *boundary, norms, participation, artifacts, interactions, and foci continually change over time* (Faraj et al. 2011, p. 1226). This continuous change causes tension in knowledge collaboration that unfolds in both positive and negative ways. In other words, we can expect to see a dynamic change of OC users' participation behaviors as they cope with the unfolding of knowledge collaboration over time. For example, a

passionate OC user tends to engage in more community activities thus creating more knowledge resources in the community. Meanwhile, a passionate OC user may also cause a knowledge collaboration barrier for others. This barrier arises because, compared with the less passionate OC users, a passionate OC user may behave in an obstinate way. For example, a passionate user may stubbornly advocate a certain way in which the community should proceed with a topic and be less willing to compromise to resolve conflicts with other passionate users (Faraj et al. 2011). As a result, a passionate OC user may becomes less passionate or even stop creating new posts. It is not a severe problem when a small number of users leave the community — as long as the number of people joining the OC is greater than the number leaving it (Butler 2001; Mindel et al. 2018).

However, an OC user can withdraw his/her membership in a way that can cause severe problems. In our study, we observe an interesting phenomenon that many highly respected OC users not only leave the community but also delete all of his/her posts. Indeed, many of them delete all of his/her posts but still engage in other community activities later except no longer creating any new posts. It is worth exploring why this extreme type of membership withdrawal behavior develops because the effects of such individual-level actions may endanger the sustainability of an OC (Mindel et al. 2018). In this study, we hypothesize such extreme OC users withdraw behaviors, which OC users deleted all his/her previous posts, as *OC user self-destruction*. It is behavior by where an OC user, who had been previously recognized as a great community knowledge contributor, deliberately deletes all his/her posts and detaches himself/herself from their avatar. The OC user's self-destructive behavior contradicts what we know about social capital (e.g., respect received from other OC users). Social capital is the most critical factor that motivates OC user engagement (McLure Wasko and Faraj 2005; Singh et al. 2011). A user who has earned a large amount of social capital should continue engaging in the OC activities or at least, even if he/she decides to leave the community, would not delete all of his/her hard work. Therefore, we aim to answer the following research question:

Why do respected online community users self-destruct upon leaving the community?

We know that individuals tend to make nonrational decisions when their attentional resources are occupied by dominant objectives, such as the enjoyment of using IT (Agarwal and Karahanna 2000). This notion has been theorized by Agarwal and Karahanna (2000) as a state of cognitive absorption. It describes individual cognitive state of flow where people are deeply involved with an activity that nothing else seems to matter (Csikszentmihalyi 1974). Agarwal and Karahanna (2000) argue that cognitive absorption is caused by temporal dissociation, focused immersion, heightened enjoyment, control, and curiosity. Cognitive absorption can occur when individuals are deeply involved with information technology.

Inspired the theory of cognitive absorption, we theorize that an OC user is more likely to create many new posts when he/she is in the state of cognitive absorption. In addition, we argue that an OC user tends to reflect his/her previous excess participation (e.g., creating too many posts) when he/she is out of the state of cognitive absorption. Such reflection may push an OC user into a state opposite from cognitive absorption. We call this oppositional state *cognitive discharged*. In a state of cognitive discharged, the user realizes the negative consequences of using OC. This realization reoccupies an OC user's attentional resources, causing an OC user to delete all if his/her previous posts. Specifically, we define *cognitive discharged* as the after effect of cognitive absorption in which the negative consequences of using OC become amplified and lead the user to self-destruct.

To answer our research questions and examine our assumptions, it requires a longitudinal case study to understand and examine the OC knowledge collaboration at the *individual level*. Compared with the studies that examine the knowledge collaboration at the group level or the platform level(Butler 2001; Butler and Wang 2012; Ren et al. 2012), the individual level of analysis can allow us to have an even more in-depth understanding of the studied phenomena (Hackmann 2003). The study venue is China's biggest online automobile community – Autohome.com. Autohome is the leading online service provider for automobile consumers in China. Founded in 2005, going public at NASDAQ in 2013, Autohome had more than 37 million daily active users in over 1,400 forums by 2019. While Autohome is achieving significant membership growth during the past few years, it is also experiencing problems with the decline in member engagement. This decline is especially reflected in the substantial portion

of high-quality content contributors that have been not only just leaving the community but also deleting their posts.

Theoretical Background

Knowledge Collaboration Problems

Examining the antecedents and the consequences of knowledge collaboration are the mainstream of OC literature (Butler 2001; Butler and Wang 2012; Faraj et al. 2011; Faraj et al. 2016; Gu et al. 2007; Johnson et al. 2015; Ren et al. 2012; Wang et al. 2013; Zhang et al. 2013b). Butler (2001) first examined the relationship between the scale of the knowledge collaboration and OC sustainability. He finds both positive and negative effects on the size of knowledge collaboration. Butler's study findings indicate that large-scale community activity can help the platform attract more users but may cause potential conflict for existing OC users. These existing users may leave the community.

Knowledge collaboration in the OC tends to be on a large scale. One of the reasons for this scale is anonymous user identity (Faraj et al. 2011). Anonymous identity can be useful for generating a more substantial knowledge collaboration because it enables the OC users to focus more on the quality of the content rather than the status of the content creators. Thus, the user-generated content can become independent of its authors and/or of the context where it was originally created (Faraj et al. 2011). However, knowledge sharing and re-creation without the consideration of context and consent from the original content creator can cause conflicts. Such user-generated content can be easily misused and misunderstood. For example, contents can be used beyond the content creator's original purpose creating potential conflict between the original creator and the reuse creator.

Indeed, attracting new users while retaining existing users is never an easy task. Many studies have shown that exercising a top-down control mechanism from the OC platform can bring unexpected effects to OC users engagements. Here are some examples: Encouragement for larger-scale knowledge collaborations can bring more knowledge resources and attract new users. But new users may repel or negatively influence existing users (Butler and Wang 2012). Allowing cross-posting can attract more new users but disengage existing users (Butler and Wang 2012). Encouraging high-volume posting can increase the community resources but demotivate the users who are sensitive to information processing cost (Gu et al. 2007). Allowing membership overlap can enlarge the user base but also increase intergroup competition (Wang et al. 2013).

Many factors have been discovered what motives OC users' participation. Examples include leadership (Johnson et al. 2015), social capital (McLure Wasko and Faraj 2005; Singh et al. 2011), community response (Zhang et al. 2013a), group identify and interpersonal bonds (Ren et al. 2012). But these motives change over time because so many important aspects of the OC are fluid (boundaries, norms, artifacts, etc.) (Faraj et al. 2011). Such fluidity or dynamic change leads to tension in the knowledge collaboration that unfolds in both positive and negative ways. When the knowledge collaboration unfolds to a negative way, we expect to see that OC users are less motivated to participate in OC activities and may even withdraw their OC membership.

Severe problems can result when an individual OC user withdraws his/her membership because OC users are inherently interconnected. Individual discontinued participation may cause network effects that influence other users (Ren et al. 2012; Singh et al. 2011). These effects can aggregate to the platform level and negatively influence OC sustainability (Mindel et al. 2018), such as deleting posts.

In addition, IT avoidance and adoption should be two different phenomena that are caused by different factors(Liang and Xue 2009). Privacy is one of the possible reasons why users deleted their post when they left the OC. However, privacy concerns are possible, but less convincing because an anonymous identity in the context of OC is less likely to trigger an individual's privacy concerns, and people with high level of privacy concern will be less likely participate the OC activities at the beginning, in other words, people will avoid using OC if he/she has high level of privacy concern. Furthermore, many OC users in our context, after deleting their posts, still participate in other OC activities later, such as answering others' questions and replying other people's posts.

Cognitive Absorption

Agarwal and Karahanna (2000) develop the theory of cognitive absorption based on three closely inter-related streams of literature: the personality trait dimension of absorption, the state of flow and the notion of cognitive engagement.

Tellegen and Atkinson (1974) define *absorption* as an individual's episode of total attention, wherein individual attentional resources are fully occupied by the object of the action, which caused by individual representational resources, such perception, imagination, and ideation. The individual will engage in a hypothetical susceptibility state. In this state, his/her behaviors are solely based on the subjective experiences of the object of action instead of a "normal" reasoning process. In such a normal process, external events can draw an individual's attention away from the object of action (Agarwal and Karahanna 2000; Tellegen and Atkinson 1974).

The *flow* is the state in which people are so involved in an activity that nothing else seems to matter (Csikszentmihalyi 1974; Csikszentmihalyi 2008). Control is one important dimension of this state of flow. The theory of flow predicts that an individuals' experiences will be most positive when he/she perceives that the task contains sufficiently high opportunities for actions or challenges that match his/her skills or capability to act (Csikszentmihalyi and LeFevre 1989)(Csikszentmihalyi, 1974, 2008). When the skills and challenges are high, the match between the tasks and skill capability in a complex environment can not only result in maximized learning from resolving the tasks, but also optimal enjoyment (Csikszentmihalyi and LeFevre 1989).

Cognitive engagement is similar to the state of flow but without the notion of control (Agarwal and Karahanna 2000; Webster and Ho 1997). Instead, Webster and Ho (1997) argue that control is the antecedent of cognitive engagement. They make a compelling argument on the theoretical distinction between the state of flow and cognitive engagement where control is a proactive characteristic in the former and more passive in the latter (e.g., YouTube users watch the commercials before the videos).

Table 1: Cognitive Absorption Definition Table

| **Cognitive Absorption**: a state of deep involvement with software, and it can be reflected in the following dimensions.	
Temporal Dissociation	The inability to register the passage of time while engaged in interaction
Focused Immersion	The experience of total engagement where other attentional demands are, in essence, ignored
Heightened enjoyment	The pleasurable aspects of the interaction
Control	The user's perception of being in charge of the interaction
Curiosity	Tapping into the extent the experience arouses an individual sensory and cognitive curiosity (Malone 1981)

*adapted from Agarwal and Karahanna (2000)

Grounded in the psychology literature, Agarwal and Karahanna (2000) define *cognitive absorption* as "a state of deep involvement with software" (p. 673) that exhibits across five dimensions: temporal dissociation, focused immersion, heightened enjoyment, control, and curiosity (See table 1). They find a significant relationship between cognitive absorption and an individuals' behavioral intention to use technologies. In the following section, we will discuss possible theoretical inferences of dynamic change in cognitive absorption and its impact on OC knowledge collaboration.

In a state of cognitive absorption

Individuals participate in the OC for purposes ranging from knowledge needs, relationship building to pure pleasure and killing time. Compared with the offline activities, the initial participation of OC activities is more likely to result in a higher positive experience due to OC flexibility. The participation is not constrained by spatial and temporal limitations. OC users seem unworried by the potential harms

by others because of the users' perceived socially ambiguous identities (Faraj et al. 2011). Much of OC participation does not involve external rewards, so intrinsically motivated behaviors are free to lead to a higher level of enjoyment. That is, individual users perform an activity (OC participation) because of the joy or satisfaction derived from the activity itself (Deci and Ryan 2002; Vallerand et al. 1997; Xixi et al. 2013). For example, passionate OC users are more likely to contribute more to knowledge collaboration (Faraj et al. 2011). The more knowledge contribution he/she makes, the higher the chance that he/she will be recognized as a community leader (Johnson et al. 2015). Thus, he/she will have more influential powers in directing the focal community activities and influencing other OC users' behaviors. Meanwhile, higher influential power and recognition as the OC leader will increase an OC user's perception of overseeing the OC activities. Such influence leads to cognitive absorption (Agarwal and Karahanna 2000). Thus, we propose

Proposition 1: The initial positive engagement with OC activities is more likely to lead to a state of cognitive absorption for a new OC user.
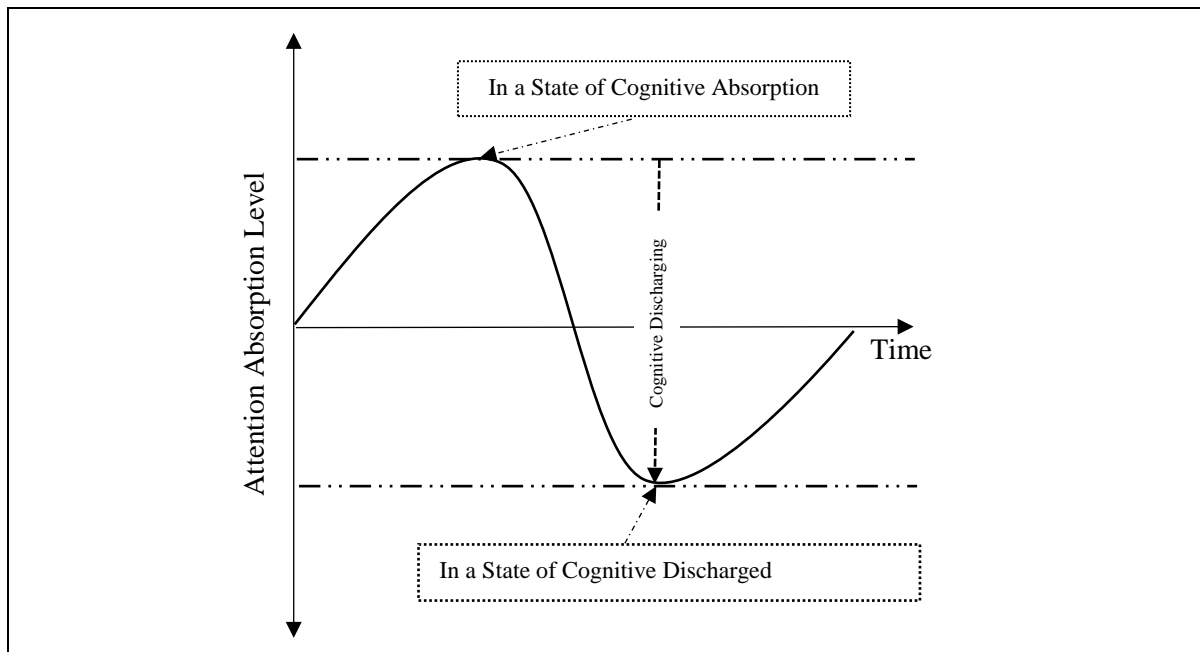
Figure 1. Dynamic view of Cognitive Absorption

In a state of cognitive discharging

Knowledge collaboration can also unfold in a negative way. For example, the user-generated content can become independence from its creator such that it can be shared, modified, recreated without the consent of the content creators which cause conflicts (Faraj et al. 2011). Also, as a passionate OC user cannot always devote a large amount of time to participating in the OC activities, and this independence causes problems because, due to the large-scale interaction in OC, a new topic can rapidly converge that makes a passionate OC user's post irrelevant to community interests.

The negative consequence of knowledge collaboration is not a problem as long as the OC user can remain in a stage of cognitive absorption within which the negative consequences of knowledge collaboration will be ignored (Agarwal and Karahanna 2000; Tellegen and Atkinson 1974). Remaining in such a state of cognitive absorption requires an individual to continuously receive intense enjoyment for his/her actions. He/she is more likely to have the most positive experience because a person positively perceives a task that contains high opportunities for actions or challenges that match that person's skills or capability to act (Csikszentmihalyi, 1974, 2008)(Csikszentmihalyi and LeFevre 1989). However, an OC user will be out of the state of cognitive absorption eventually when the OC tasks become less challenging and routine because of their familiarity. The familiarity of the OC tasks can decrease the challenges while increasing individual's skill capabilities so that future participation will be less rewarding because there is less enjoyment from problem-solving, and fewer skills to be learned.

Thus, the OC user will grow more aware of previously ignored negative consequences of their earlier OC participation (e.g., privacy risks, addiction, and other possible conflicts). This awareness results in an adverse impact on knowledge collaboration reduce the individual's motivation to participate in future OC activities.

As the knowledge collaboration keeps unfolding in a negative way while the familiarity with the focal OC keep increasing, the recognition of negative consequences of previous knowledge collaboration continuously contrast and challenge an OC user's initial perception of their perceived enjoyment of using OC. In this study, we define *cognitive discharging* as a state where OC users keep reflecting their overcommitment of previous OC activities when they are out of their state of cognitive absorption. Thus, we propose

Proposition 2: The increase of the familiarity of the focal online community will eventually help an OC user get out of their state of cognitive absorption, allowing cognitive discharging where an OC user becomes aware of the negative consequences of previous knowledge collaboration.

In a state of cognitive discharged

Individuals tend to make decisions based on those experiences that can easily recalled from memory (Bazerman and Moore 2009). Any possible negative experiences due to his/her uncontrolled engagements arising from a state of cognitive absorption may further drive him/her toward cognitive discharged (the opposite state of cognitive absorption). Eventually the negative emotions (e.g., regret, conflict, anger, disappointment) reoccupy the OC user's attentional resources. Protection motivation theory suggests, if an individual believes that behavior can mitigate or avoid the threat (in the sense of remedying his/her negative emotions in this study) he/she will engage in a coping behavior. Such coping behavior, like cognitive absorption, does not necessarily rational, but intents to protect against the potential harms (Rogers 1975), such as psycholigical harms resuting from cognitive discharging. Thus, we propose,

Proposition 3: Continuous cognitive discharge will lead the OC user to a stage of cognitive absorption in the opposite direction which causes the OC user to self-destruct.

In this study, we argue that the reversal cognitive absorption, which is defined as a stage of cognitive discharged, is an effect resulting from the dramatic contradiction between a state of cognitive absorption and a state of cognitive discharging. This reversal should serve as one of the antecedents of OC users' self-destructive behaviors. (see figure 2 for the theoretical illustration)

Methodology

To answer our research question, we require a longitudinal case study. Yin (2003) suggests that the case study is useful for exploratory research and/or the phenomenon is too complex for experiment and survey methods. Using Yin's positivist case study methodology, the unit of analysis, sampling method, data sources, and data analysis method are important aspects of ther research design.

Unit of analysis

The proposed study's outcome of interest is OC users' self-destructive behaviors, so the unit of analysis is the individual Autohome user. Specifically, due to the larger number of users and many different Autohome forums, the study will only examine those users who have created many high-quality posts and/or deleted all their posts in the following forums: Mercedes-Benz C-Class, Mercedes-Benz E-Class Mercedes S-Class, Volkswagen CC, and Volkswagen Golf. The reasons for picking for these particular forums are twofold: First, one of the authors is an experienced Autohome user with over ten years of use and he is most familiar with the selected forums. Based on his experience, he has seen a significant portion of users from those forums delete their posts when they left the community. Second, those selected forums have been very active for many years, so these fora are very likely to observe further OC self-destructive behaviors in the future.

Sampling method and data sources

The data sources will center on observations and interviews. In Autohome, a unique virtual medal is given to the high-quality posts by either the editors or the focal OC leaders. Authohome does not allow users to delete their posts, but does allow users to modify their posts. Instead self-destructive users in this OC delete the actual contents of their posts. The empty posts provide a trace of such self-destruction. Therefore, we plan to read through all the high-quality posts and identify those "deleted" posts. The dialogs between the content authors and other community members will be imported to NVivo for further analysis. Also, we will continuously monitor the selected content creators' activities if his/her last login time is less than one year. We expect to monitor a total of 100 to 150 Authohome users for one year, and the interview invitation will be sent through Authohome forum email system at the end or close to the end of the observation.

Data analysis

The archived data will be imported to NVivo for further analysis, and multiple cycles of coding will be performed for archived records. The vivo coding method will be used in the first coding cycle, and we plan to use the words or short sentences from the participant's own languages as the codes. Pattern coding will be used to group and summarize the codes from vivo coding into a smaller number of categories or constructs. Lastly, theoretical coding will be used to examine/re-formulate propositions.

The interview questions will be designed based on the archived data analysis and observation results. This design will enable us to use semi-structured interviews to verify the findings and explore the possibility of new theoretical directions.

Expected contributions and results

First, the theory of cognitive absorption has been studied in many contexts (Hsiu-Fen 2009; Leong 2011; Vallerand et al. 1997). However, in these studies, cognitive absorption generally serves as a moderator or mediator that directly or indirectly affects the degree to which individual intentions will result in the intended behaviors. Our study expects to extend this previous work by demonstrating the dynamic nature of changes in cognitive absorption. Such a dynamic can impact knowledge collaboration in a way that unfolds tensions in the knowledge collaboration. Furthermore, this dynamic can form cognitive absorption not only as a positive impact IT use but also in the form of cognitive discharged as a negative impact IT use.

Second, we seek to open the black-box of the extreme OC membership self-destructive behaviors in which OC users delete all their posts as they leave the community. Examining OC knowledge collaboration at the individual level can provide a richer understanding of how an individual level action can cause aggregate effects that may endanger the OC sustanability (Mindel et al. 2018).

Lastly, as this is an exploratory study, we expect to offer other insightful theoretical and practical implications for future research on cognitive absorption and knowledge collaboration.

Acknowledgments

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