

ORIGINAL ARTICLE

Digital Discipline: Theorizing Concertive Control in Online Communities¹Jennifer L. Gibbs , Ronald E. Rice, & Gavin L. Kirkwood

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Concertive control (CC) theory has primarily been applied to traditional offline, work-based, closed membership teams. New organizational forms such as online communities have opened up additional sites in which CC processes may operate. This article makes several contributions to CC theory and research. First, it increases the applicability of CC theory by extending it from offline to online, work to non-work, and closed to open membership contexts. Second, it increases our understanding of CC processes by elaborating on three mechanisms of CC (group autonomy, group identification, and generative discipline) and how they operate differently in online work/non-work and closed/open contexts. Third, it develops propositions about how these mechanisms interact with three prominent media affordances (visibility, persistence and editability) within those contexts. Extending CC theory to online communities helps to explain individuals' responses to normative group pressures online, which is highly relevant in our increasingly culturally and politically polarized society.

Keywords: concertive control (CC), media affordances, normative influence, online communities

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The theory of concertive control (CC) has a long history in organizational communication research (Barker, 1993, 1999). CC represented a departure from traditional bureaucratic management to newer participatory approaches (Stohl & Cheney, 2001), emphasizing peer-based forms of control arising in self-managing work teams. The substantial body of CC research has primarily focused on traditional, face-to-face work teams (Barker, 1993, 1999; Larson & Tompkins, 2005; Papa, et al. 1997). While the theory has thus been rather narrow in scope, the “peer pressure” control dynamics that it explains are increasingly visible in emergent groups that arise outside of formal organizations in online environments as well, and may even be exacerbated by affordances of the online context. The participatory nature of the Internet provides new contexts for peer influence to arise, and dynamics of

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normative influence can be seen in online movements across the political spectrum ranging from QAnon and White nationalists to #BLM and #OscarsSoWhite, as well as cancel culture (Ng, 2020). We argue that mediated forms of organizing such as online communities, in which large numbers of Internet users with common interests or goals interact and form relationships (Jones, 1995; Katz *et al.*, 2004), can also provide conditions for CC to arise.

This article first briefly explains CC. The next section expands the traditionally confounded context of offline, work-related, and closed membership teams to three dimensions (offline/online, work/non-work, and closed/open communities). The subsequent section articulates the three primary mechanisms through which CC works (group autonomy, group identification, and generative discipline), identifying similarities and differences across offline and online contexts. The final section assesses how three key media affordances (visibility, persistence, and editability) may interact with the CC mechanisms to facilitate or constrain online CC. Throughout, these discussions provide the foundations for a series of propositions, with implications for future research.

Concertive Control in Traditional Work Contexts

CC is a form of peer-based influence that arises when members in self-managing organizational teams work “in concert” with one another to develop and then enforce norms and rules. CC occurs in environments where groups have the autonomy to self-govern, identify with a common purpose, and create group norms that are enforced through peer discipline (Barker, 1993). Value premises and decisions are negotiated among team members (Papa *et al.*, 1997) through a process in which “value-based interactions [become] a social force that [controls] their actions” (Barker, 1993, p. 423). Barker describes the three distinct phases in which CC develops: (1) members negotiate consensus on shared values; (2) these values are internalized and invoked as informal norms that guide their behavior; and (3) these norms become solidified into binding rules. When group members violate the rules, peers take it upon themselves to sanction or discipline the violator; when members reinforce or follow the rules, peers provide affirmation and social benefits.

CC is possible when members form strong relationships with one another and feel accountable to the group. As members have taken part in creating the norms and rules, they feel a sense of buy-in and are personally affected when other members deviate from the rules, making it more difficult for individuals to leave the communities they helped shape. A study of loan providers in Bangladesh (Papa *et al.*, 1997) found that team members internalized group norms in subtle ways. Barker (1993) also described instances in which self-managed teams engaged in more overt formalization of group norms in workplace artifacts. Thus, while participatory structures such as self-managing work teams are designed to be autonomous and democratic, providing feelings of empowerment and trust, they may also enact forms of CC—including surveillance and discipline—that can, ironically and

perhaps paradoxically, be harsher and more rigid than traditional forms of bureaucratic control (Barker, 1993; Papa et al., 1997).

CC has been distinguished from both *bureaucratic control* and *unobtrusive control*. *Bureaucratic control* operates through rational-legal authority, hierarchical positions, and standardized rules, among other characteristics (Udy, 1959; Walton, 2005). *Unobtrusive control*, on the other hand, is exercised when employees (often unwittingly) consider the well-being of the organization during decision-making and act in its interests, conflating them with their own, even when the two sets conflict (Bullis, 1991; Pacanowsky & Trujillo, 1983; Tompkins & Cheney, 1985) and relies on internalization of organizational values rather than social pressure created by interpersonal relationships.

CC also differs from other related concepts that have arisen more recently to describe online control processes. For example, Dailey and Dyhre (2020) proposed the concept of *sociomaterial control* in which boundaryless organizations serve as a context for individual consumers to be controlled by social media users, such as Instagram influencers, whose ability to engage in self-discipline and comply with discipline from their followers has a direct impact on their popularity and earning potential. Separately, algorithms also exert a form of rational control and perform a disciplining function by “directing our limited attention and potentially suppressing other social activity” (Leonardi & Treem, 2020, p. 1611) as they manipulate online content and behavior to be more or less visible due to algorithmic ordering. *Algorithmic control* is a newer form of organizational control that enables employers to use algorithms to direct, evaluate, and discipline workers (Kellogg et al., 2020). Whereas algorithmic control is a form of rational (rather than social) control that operates in work contexts—whether traditional organizations or newer gig economy work arrangements such as the ridesharing context (Chan & Humphreys, 2018)—sociomaterial control is more diffused and unbounded, operating in: (1) boundaryless organizations; (2) settings where large numbers of non-traditional stakeholders have neither rich relationships with other users and nor share the same goals; and (3) where there is a lack of negotiation and consensus of the norms that should be followed (Barker, 1999).

Expanding Concertive Control Contexts

Three Contexts of Online Communities for CC

Traditionally, CC research has assumed a single, confounded context: that is, offline, work-related, and closed membership (access limited to formal members of a specific team). However, organizational structures continue to evolve and adapt, including flattened hierarchies, distributed project teams, adhocracies, networked organizations, flexible work, and self-managing teams (Walton, 2005, p. 575). Information and communication technologies have facilitated not only these within-organizational changes (Rice, 2017), but also extra-organizational forms as

well, such as online communities. As COVID-19 concerns have shifted much organizational work from physical to online spaces, the supposed distinctions or boundaries between offline and online, and work and non-work, have become much more ambiguous (Hu, 2020; Waizenegger *et al.*, 2020).

Online communities differ from both traditional and newer technology-enabled work contexts in that: (1) they originate and take place online (though possibly with offline complements) and can bring together participants who lack pre-existing in-person relationships; (2) they may also be composed for the purpose of non-work activities, such as social support, social interaction, or entertainment, which may be co-constructed by members; and (3) may be more or less closed or open (access restricted or unrestricted to formal members of a specific group). De Souza and Preece (2004) also noted differences in work/non-work and closed/public (or open/private) aspects of online communities.

Offline/Online Community

Typically, definitions of community have involved social interaction, psychocultural bonds, common goals, and physical collocation (see Katz *et al.*, 2004; Wellman & Gulia, 1999). The online context generally includes the first three. De Souza and Preece (2004, p. 580) defined an online community as “a group of people, who come together for a purpose online, and who are governed by norms and policies,” involving sociability (people, purposes such as goals and actions, and policies such as norms and rules) and usability (software, features, and interface). Scholars have long advocated for the viability of online communities (Baym, 2000; Hiltz, 1984; Jones, 1995; Wellman & Gulia, 1999), although recognizing differences in the strength of their social bonds and permanence (Gibbs *et al.*, 2019; Kraut & Resnick, 2011; Rice, 1984). It is important to differentiate online communities from pre-existing work groups that interact using communication technologies, such as virtual teams (Raghuram *et al.*, 2019). Online communities have been primarily text-based, although they increasingly include video, images, audio, and interactive programs (see this article’s Discussion). Online communities further differ from traditional work-based organizations in that they do not necessarily require an overarching organizational structure or set of tasks, though they (especially groups in mega-platforms, such as Facebook) may still impose control and constraints on individual and networked users through their implicit design (Szulc, 2019) as well as more explicit content regulation. While they often lack pre-existing authority structures, online communities may experience emergent leadership and social influence (Huffaker, 2010). Further, social norms can be conveyed through online community comments, posts, feedback, followers, tagging, web links, interactions, and rating systems (Chung, 2019; Mikal *et al.*, 2014; Stroud *et al.*, 2015). Online communities can generally be considered what Etzioni (1975) labeled as voluntary associations. He argued that organizations use three forms of power (separately or in combination) to achieve compliance and commitment of employees: coercive/alienation, remunerative/calculative, and normative/moral (of which voluntary

associations is one type). Normative control depends on employees sharing organizational beliefs and values, so that employees deem commitment and performance as moral, and thus do not have to be tightly monitored or evaluated.

Work/Non-Work and Closed/Open Communities

Work-related closed communities are typically restricted to employees of a specific company such as IBM's Beehive or Communities (DiMicco *et al.*, 2008), and they may also include communities of practice (Wenger, 1998). To the extent that an online community is more work-related and closed, traditional issues of bureaucratic and unobtrusive control may also apply. *Work-related open* communities refer to voluntary professional communities with open membership (e.g., the message forum Airliners.net, Seraj, 2012). Members may have varying motivations (e.g., contributors to Linux Kernel; Shaikh & Henfridsson, 2017), raising questions about the nature of control and governance. Some online communities are set up as safe spaces for employees to vent about employment practices and work conditions, and thus act as sites of resistance (Gossett & Kilker, 2006). Other examples of open, work-related communities include GitHub repositories (Dabbish, Stuart, Tsay, & Herbsleb, 2012; Mergel, 2015), Wikipedia, the open source community Linux (Faraj, Jarvenpaa, & Majchrzak, 2011; Ransbotham & Kane, 2011; Shaikh & Henfridsson, 2017), and informal yet professional online networks of practice (Macià & García, 2016).

Non-work closed communities include forums with invite-only, registered, or paid membership such as Book Club (Gibbs *et al.*, 2019) or private Facebook groups, intended to support various kinds of social activities ranging from college alumni to soccer parents. *Non-work open* communities are social in nature and open to public participation (Reicher, Spears, & Postmes, 1995), organized around social, personal, or political interests such as health-related support groups (Rains & Young, 2009), or forums such as 4Chan, Imgur, or Reddit (Mikal *et al.*, 2014; Mikal, Rice, Kent, & Uchino, 2015; Nissenbaum & Shifman, 2017). Figure 1 depicts our typology of online community contexts. While we focus here on work/non-work and closed/open communities, there may be other important distinctions (e.g., information versus support, single versus multiple purposes).

General Context Propositions for Online Communities

Our most general proposition is that *concertive control is more likely to arise in online contexts than in traditional work teams (P1)*. This is due to the voluntary and more public nature of online communities compared to formal organizations. Research in social psychology has demonstrated that people become even more committed to social groups after public commitment, such as fraternities after being hazed (Cialdini, 2001) or cults when end-of-the-world prophecies fail (Festinger, Riecken, & Schachter, 1964). Afterwards, they will go to tremendous lengths to behave consistently, according to the commitment and consistency principle (Cialdini, 2001). This phenomenon is observable in the recent #StopTheSteal

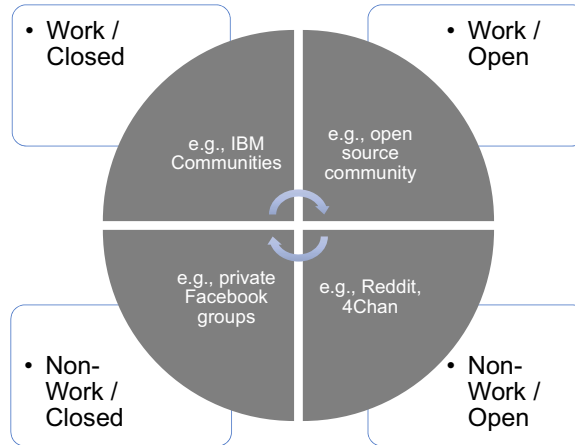


Figure 1. Typology of online community contexts for concertive control

movement online, in which QAnon conspiracy theories fueled the belief by Trump supporters that the 2020 U.S. presidential election had been stolen, and staunch supporters not only launched an insurrection on the Capitol to stop the certification of the votes, but continued to believe that Donald Trump would be instated as president for several months after the election results were finalized, despite no evidence of significant voter fraud. The echo chambers created by online spaces provide strong normative pressures that are likely to intensify and exacerbate CC processes online.

More specifically, partially because of the greater emphasis on normative forces and commitments of voluntary organizations (Etzioni, 1975), their members' shared interests (Wellman & Gulia, 1999), and the reduced structural and authority power associated with traditional work-based organizations, we posit that *concertive control is more likely to arise in non-work than work online communities (P2a)*. They are likely to regulate more social and personal aspects of members' lives such that CC is more personally invasive, and less regulated by norms of professionalism or organizational human relations policies. For instance, members of a non-work community originating on a wedding planning website (Gibbs et al., 2019) developed a strong sense of CC. They could be quite harsh in disciplining members for violating their norms of sensitivity to the socioemotional needs of other group members, with debates about parenting and other personal topics. In contrast, members of the work-related open source Linux community (Shaikh & Henfridsson, 2017) also tried to regulate one another's behavior, but this behavior was more professionally based and restricted to ideological differences in the tools used by the community.

Further, *concertive control is more likely to arise in closed than open online communities (P2b)*, because closed groups are more likely to develop more personalized relationships, trust and mutual respect, shared personal content, and normative

forces (such as reciprocity) needed for group identification and peer influence to form, and greater accountability and social obligation among members (van Osch & Bulgurcu, 2020). In open online communities, users are typically voluntary, often anonymous or pseudonymous, and members can come and go at will (Kraut & Resnick, 2011; Ransbotham & Kane, 2011; Wellman & Gulia, 1999).

Mechanisms of Concertive Control, Offline and Online

The following sections articulate how the three key mechanisms of CC (Barker, 1999) may operate in offline and online community contexts.

Group Autonomy

Offline

Because traditional CC develops in self-managing teams without a formal leader, group autonomy is fundamental (Barker, 1999). Drawing on Langfred (2000), we distinguish between individual and group autonomy: “Group autonomy is the amount of control and discretion the group is allowed in carrying out tasks assigned by the organization . . . [it] is not the aggregation of individual autonomy to the group level” (p. 567). Both individual and group autonomy may range from high to low, resulting in four combinations. Barker’s CC is traditionally focused on the case of higher group but lower individual autonomy (“type 1”). There is an inherent tension, conflict, or interaction between individual and group autonomy (Langfred, 2000). Indeed, substantial individual autonomy can work against group cohesiveness and autonomy of the group, hampering group effectiveness. Thus, CC is necessary to direct individual autonomy toward group goals, to the extent that the group has autonomy to achieve or even define those goals, and sufficient identification and generative discipline to shape members’ actions.

The self-managed teams Barker observed had control over how they organized work processes, what roles employees enacted, whom they hired on the team, and whose employment was terminated (Barker, 1993). The work teams also developed their own values, norms, and rules and enforced them, including disciplining members who violated these rules and norms. Although Papa *et al.*’s (1997) study of CC at the Grameen Bank did not find the same levels of autonomy reported in Barker’s case study, as they still followed the organizational goal of issuing loans, the team members did have the ability to develop and enforce strenuous group norms, such as regularly working 12-hour days and ensuring a 99% loan recovery rate.

Online

The inherent autonomy of online communities is likely to strengthen the possibility of CC as it creates space for emergent norm creation by peers and (re)enforcement outside of traditional forms of organizing. In the online context CC may also apply to the case of both high group and high individual autonomy (“type 3” in

Langfred's [2000] typology). Online non-work open groups (such as health-related public communities; Atanasova & Petric, 2019, who emphasize their collective empowerment) in general have more autonomy than self-managed offline or online work-oriented closed groups because they are free from managerial influence, established organizational structures and pressures, (typically) marketplace economic forces, and dependence on the community for an income (see Barker, 1993). Although online non-work communities may have forum moderators or administrators, these roles are often limited; further, there are not necessarily initially preset organizational goals or formalized values shaping the community. However, online communities generally do have a purpose, whether it is information sharing, social interaction, or support, that attracts members to such voluntary sites (McEwan, 2015). To that end, many online groups formally specify the scope of their activity through mission statements or rules about what type of content is allowed and/or not allowed (Shea & Shea, 1994). Nonetheless, what they do, what they stand for, and what they believe in can change over time. For example, Gibbs *et al.* (2019) showed how a closed wedding planning message board evolved from its original purpose into a more general community addressing diverse issues ranging from parenting to popular culture, product recommendations, and divorce.

Group Identification

Offline

Group identification is a sense of “oneness” or belonging to the group (Ashforth & Mael, 1989), an ongoing negotiated process among team members (Barker, 1999). The effectiveness of CC systems in regulating worker behavior depends on the members identifying with a group's set of value premises that guide their decision making and behavior (Papa *et al.*, 1997). By acting together, workers exhibit identification with the team and empower themselves through communication behavior to achieve codetermined goals. In the process, team members conform to group norms not only out of a sense of obligation or accountability to their teammates, but also to foster team unification and persistence over time. Conversely, individuals are not likely to conform to group norms of behavior if they do not identify with the group (Rimal & Real, 2005).

Norms are inherently social and communicative, which shape their perception, in turn influencing attitudes and behavior (Lapinski & Rimal, 2005). Group identification in CC traditionally works through the development of close, personalized relationships in face-to-face work teams over time towards a shared goal, and exposure to higher performers (Sewell, 1998). Conforming to these similar others fosters positive emotions and provides a pathway for group identification. Awareness of subjective norms can arise through observations (direct or indirect) of others' reactions to behaviors (via explicit or implicit cues) by self or by others. Compliance with that group identity and associated behaviors must be visible in some way, for others to acknowledge, accept, and reinforce that compliance (Lapinski & Rimal,

2005). Shmargad, Coe, Kenski, and Rains (2021) made Lapinski and Rimal's (2005) distinction between individuals' perceived or *subjective norms and collective norms* (a social systems' expectations about attitudes and behaviors, which emerge and are constructed through social interaction within a salient group) more explicit, arguing that both descriptive and injunctive norms occur at both individual and collective levels. Similarly, Sewell described how surveillance may be "horizontal" through group members (reflecting CC) but also "vertical" through organizational information and communication systems (reflecting bureaucratic control).

Online

Online (especially large) communities may lack close personal relationships and accountability, given the massive and changing membership and highly skewed participation in such communities (Kraut & Resnick, 2011; Rice, 1984), reducing motivation to adhere to group norms. The formation of personalized relationships may be further complicated by the relative lack of socioemotional cues in text-based online environments. Early research on computer-mediated communication (CMC) associated these reduced cues with antisocial outcomes such as verbal hostility or "flaming" (Siegel, Dubrovsky, Kiesler, & McGuire, 1986). However, later research largely rejected this argument, finding prosocial, emotional, or even hyperpersonal interpersonal outcomes (Rice & Love, 1987; Walther, 1996). Online communities can display high levels of identification and normative influence that shape member behavior (Aakhus & Rumsey, 2010; Katz *et al.*, 2004; Mikal *et al.*, 2014, 2015; Nissenbaum & Shifman, 2017). It can also be argued that online communities in which members develop close, personalized relationships may develop even stronger forms of CC due to the activation of both group *and* interpersonal relationship processes (e.g., Gibbs *et al.*, 2019).

Generative Discipline

Offline

While the term "discipline" may have negative connotations, peer discipline in CC groups is intended to be "generative," in that it facilitates positive, productive, and prosocial outcomes, and longevity. Generative discipline occurs when team members, through peer pressure and communication, enact, negotiate, and enforce their norms and values (Barker, 1999). For instance, Papa *et al.* (1997) reported that members of the Grameen Bank pressured each other to repay loans, as another member's failure to pay could negatively affect their own credit opportunities. Bank workers also engaged in disciplinary techniques to enforce informal norms to work long hours and forego vacations, to the point where members would prioritize their mission to help the poor over spending time with their own families. Peer pressure was enacted through conversations in which workers emphasized the importance of working together toward shared goals. Field workers would enact generative discipline for problems with loan recovery by criticizing one another and referring to

the loan payment records that were posted behind workers' desks. Kirby and Krone (2002) found that even in companies with explicit work-family policies and management support for such policies, workers felt pressured by their co-workers not to take advantage of those policies, as those who were not eligible for such benefits resented and badmouthed these policies and the employees who used them, creating a discourse of inequity and preferential treatment.

Generative discipline works through a process of normative influence that depends on the co-construction, perception, negotiation, and enforcement of norms. Influence research (Cialdini, 2001) distinguishes between descriptive ("is") norms (beliefs about behavior prevalence, affecting individuals' perception of normative behavior), and injunctive ("ought") norms (perceptions of influential others' expectations about compliance with or social approval of behavioral norms, with implications for coercion and social sanctions). These may be highly correlated but may also diverge. The theory of normative social behavior (Rimal & Real, 2005) extended that framework to argue that injunctive norms, outcome expectations (to self, to others, and anticipatory socialization), and group identity all moderated the influence of descriptive norms on behavior. The strongest effects should occur with frequent, observable descriptive norms, norms about behaviors with attributes that are susceptible to normative influence, strong injunctive norms, and strong sanctions for disregarding such norms (Lapinski & Rimal, 2005; Rimal & Real, 2005). We regard injunctive "ought" norms as being particularly influential in CC, giving rise to disciplining processes that provide sanctions for violating, and rewards for fulfilling, these norms.

Online

Aakhus and Rumsey (2010) reported that some forms of control can foster prosocial interactions in online communities. Dutton's (1996) investigation of formal rules and informal practices in a municipal online community (open, non-anonymous) and a university bulletin board system (closed, with pseudonyms), showed how technical, normative, and cultural factors can shape online behavior. Users in both systems grounded their concerns about the nature of the sites in principles of freedom of speech, civil liberties, slander, access, privacy, and property rights, among others, so they informally developed a complex array of rules to govern themselves. The public system even began a topic area specifically on appropriate content and interactions. The manager depended on community-policing, self-policing, and informal influence to manage online behavior.

There are many other instances of online peer disciplining in more contemporary online contexts. On Howard Dean's Blog for America, citizen bloggers, rather than the campaigner's staff, developed a self-disciplining process that aimed to maintain control of the campaign message, while reducing online debate and participation (Janack, 2006). Nissenbaum and Shifman (2017) described instances of flaming on an anonymous 4chan discussion board, where veteran community members would ridicule new users for not following norms for meme posting. In

China, online weiguan (网络围观) is a societal-level form of CC involving sharing, commenting, posting, and reposting that involves pressuring the government to solve the issue while also reinforcing social norms by “show and shame” of individuals deemed by the public as too controversial, corrupt, or harmful. This creates a vast potential pool of “proactive spectators” or a “participatory panopticon” (Xu, 2015, p. 267). In a study of an online discussion forum, Gibbs *et al.* (2019) showed that normative influence and CC (especially instances of peer discipline) were strong predictors of an individual’s sense of virtual community, helping regulate and perpetuate the community. Garner and Peterson (2020) reported how current and former members of a U.S.-based megachurch used online (open, non-anonymous) dissent to (among other things) defend the community and provide corrective direction for the church.

Established online norms facilitate communication and stability through identifiable and understandable frames of format, style, and content, by both posters and responders (Lüders, Prøitz, & Rasmussen, 2010). However, norms may change and weaken or strengthen over time, influencing the nature of generative discipline. Postmes, Spears, and Lea (2000) explained that groups that communicated through email created norms dealing with the content and formatting of messages, but also discovered that these norms grew stronger over time, and that they were unique to each group. Shaikh and Henfridsson’s (2017) detailed study of email discussions about version control in the Linux Kernel identified four coordination processes in open source governance, each a different kind of peer control, and most co-existing at different time periods.

While peer disciplining and normative influence often serve to reinforce socially acceptable attitudes and behaviors, they may also reinforce socially risky or undesirable behaviors (Lapinski & Rimal, 2005). For example, Haas, Irr, Jennings, and Wagner (2011) analyzed anonymous pro-anorexia online communities, an example of what they call an Online Negative Enabling Support Group. Members supported harmful behaviors and an anti-recovery position, and co-constructed an in-group identity that included a norm of high self-disclosure while not correcting others’ negative messages. Here, peer discipline also served to encourage the self-discipline needed for a pro-anorexia lifestyle, and to encourage others to engage in the behavior. Uncivil discourse and hate speech can become accepted social norms within some communities. Incivility in users’ comments on an online newspaper’s community became more frequent when reinforced by descriptive norms (e.g., incivility in proximate comments) or by injunctive norms (e.g., up votes for the comments) (Shmargad *et al.*, 2021). Other examples include neo-Nazi Internet forums and a host of other alt-right online communities (Roose, 2017).

Media Affordances

We now consider the way media affordances interact with the three CC mechanisms. A media affordances approach shifts the focus from innate technical features

of a given technology (e.g., Facebook or email) to more dynamic “possibilities for action” that may exist to greater or lesser degrees across a range of technologies (Gibson, 1986; Rice et al., 2017; Treem & Leonardi, 2013). The affordance approach is a relational view that accounts for both the features and capabilities of various online platforms and the goals, abilities, and perceptions that users bring to their technology use. Prior literature has identified three key affordances (Rice et al., 2017; Treem & Leonardi, 2013; Treem, Leonardi, & van den Hooff, 2020; see this article’s Discussion for consideration of other possibly relevant affordances): visibility (including anonymity), persistence, and editability.

Visibility: Message Transparency and Network Translucence

Visibility affords users varying ways to observe others’ online behavior, but also to be observed, whether intended by the user or observer or not, and whether known to the initial user or not. Observability is, after all, a prerequisite for social learning in general (Bandura, 1977). Visibility may enable online surveillance by government or corporate entities, malware, hackers, etc., but also by other members of the community, such as Facebook friends or message forum members (Treem & Leonardi, 2013), and by unknown other users, both directly and through archived material. In online forums and social media platforms, messages (content, including images) and relationships (linkages among network members) are variously visible. Leonardi (2014; Treem et al., 2020) referred to these two aspects of communication visibility as *message transparency and network translucence*.

Autonomy

Through repeated exposure to, and interaction with, online community-related content, members may develop or perceive themes specific to that community (Mikal et al., 2014). Further, members may engage in extended threads or discussions about these themes, critiquing and revising the content or meaning. Visibility can enhance a sense of group autonomy by revealing the sources of group collaboration and decisions as originating from within the group. When online groups make their rules and norms visible through explicit statements (as in many Facebook groups and message forums) as well as making their decision-making processes transparent, this is likely to enhance the group’s sense of autonomy. The ability to observe repeated participation by some members, and, more specifically, the range of others who are linked to those members and the degree of interaction with other communities or organizations could help create a sense of the participants and boundaries of the community; thus *visibility may enhance group autonomy (P3a)*.

Identification

In a study of Dodgeball, an early mobile social network site, Humphreys (2011) discovered that the site enabled vertical corporate surveillance by entities such as Google, horizontal surveillance by users who could monitor each other’s

communication and behavior, and self-surveillance by users who looked over their prior check-ins and learned about their own behavioral patterns. Peer-based horizontal surveillance, enabled by the affordance of visibility, is likely to be associated with online CC norm development and reinforcement. Patterns of linkages (network translucence, such as who responds to, reinforces, critiques, or otherwise comments on other members' posts) may reflect stronger or weaker adherence to norms of participation.

Online environments vary in notification or news capabilities, all affecting visibility (Treem & Leonardi, 2013). Notifications may enable and encourage members to observe each other more frequently by checking updates in the group, reifying norms, contacting other contributors, and strengthening identification. Postigo (2016) explained that subscriptions to a YouTube channel of video game commentators facilitated high levels of social interaction because members were notified when new content was published, and by whom. To the extent that membership in closed groups may be somewhat visible to outgroup members through notifications or RSS feeds, or externally embedded community videos, and this is known by the community members, and if the group is considered exclusive or desirable, members may feel greater identification and commitment within the group. Thus, *visibility can strengthen group identification (P3b)*.

Discipline

Members are less likely to conform to norms if they believe that salient others are not aware of or observing their nonconforming behaviors, and thus will not impose sanctions or pressure to conform (Lapinski & Rimal, 2005). In more closed and less visible online communities, behavior and consequences are not as easily observable by, or communicated to, salient others, creating less likelihood of sanctions or conformance pressure. Further, some may not be able to observe others' behaviors or consequences in the specific context. Thus, individuals may misperceive the underlying prevalence of the relevant behavior, creating inaccurate perceptions of descriptive and injunctive norms.

Yet, for CC to work, members need to accurately perceive the collective norms. Online community visibility may strengthen the ability to affirm or reward (via attention, compliments, ratings, likes, follows, upvotes, retweets, etc.) those who exemplify group norms. Message transparency through archived or threaded online discussions can also be used to correct misperceptions. Discipline seems primarily based on message transparency, but it could operate less frequently through network translucence by reducing linkages with the deviant member. Generative discipline can also take the form of self-surveillance through self-imposed behavioral norms due to perceived visibility fostering actual or suspected surveillance. Even one's offline behavior and impression management may be constrained by the awareness of potential online coverage, creating an "extended chilling effect" (Marder, Joinson, Shankar, & Houghton, 2016), a self-imposed indirect form of CC,

somewhat similar to the Panopticon effect (Foucault, 1998). Thus *visibility may enhance generative discipline (P3c)*.

Visibility: Anonymity

Online anonymity is the extent to which online identifying information (such as personal characteristics, content, physical or network location, linguistic cues, name, etc.) cannot be associated with a specific person (Bullingham & Vasconcelos, 2013; Wallace, 2008). The appropriateness of anonymity is contextual to each group and can also be shaped by group norms (Rains & Scott, 2007). Most online communities (whether through their members or their features and settings) allow for some level of anonymity. Depending on the online platform (Szulc, 2019), users can choose to not post real photos of themselves, omit identity information, use a pseudonym or avatar, use the same name as others (even the account name “anonymous”), or switch among multiple accounts/identities. Massa (2017) described how in an online community called Anonymous, “users without personal identifiers could post and exchange messages liberally, with little fear of reprisal from powerful actors, meaning that individuals felt free to adopt the deviant forms of behavior crucial to engagement in pranks” (p. 26). Users’ perception of their, and other participants’, anonymity may or may not correspond to the site’s or system’s technical forms of anonymity (Gavish & Gerdes, 1998; Hayne & Rice, 1997), due to platform monitoring or linguistic cues, for instance. Given that anonymity has rarely been considered a media affordance (for an exception, see Mao & DeAndrea, 2019), we consider it a form of (low) visibility.

Autonomy

At high levels of anonymity (including the use of changeable or non-required pseudonyms), it may be difficult to establish a group sense of autonomy or cohesion, or to coordinate and direct actions toward autonomous group goals (Langfred, 2000), as each contribution is unrelated through network translucence. Each participant could have full autonomy from each other, and be disassociated from their online behaviors, making it difficult to manage group identification and disciplining. The reverse conditions may also hold: when all members are completely identifiable to each other and also to non-community members (i.e., open), there may be weakening of group identification and reference to multiple, external norms (e.g., “context collapse; Marwick & boyd, 2010; Nicholls & Rice, 2017; Szulc, 2019). While either condition may provide message transparency, only the more identified condition offers meaningful network translucence. At moderate levels of anonymity, both content and some network links can be related through enduring pseudonyms or roles, helping to focus and shape action such as disciplining and group actions. Thus, *there may be a curvilinear relationship between anonymity and a sense of group autonomy (P4a)*.

Identification

CC has largely been applied in face-to-face environments such as offline, work-based, closed teams in which members provide social cues and have developed close relationships with one another. However, SIDE theory argues that anonymity (especially visual) can be an antecedent, through deindividuation, of a strong collective identity in online contexts (Reicher et al., 1995), as it allows “certain social group and category information that is less dependent on visual cues for its communication to become more salient” (Lea, Spears, & Groot, 2001, p. 527). Thus, in general, CC normative behaviors and identification could become stronger in anonymous environments, if the online group identity is salient.

We further propose connections with distinctions between visual and discursive anonymity. In *visual* anonymity, there is no image (e.g., photo, avatar) of a user (Lea et al., 2001). This would focus attention on the content, *heightening* message transparency. Lee and Nass (2002) conducted an experiment to examine the relationship between visual anonymity and normative behavior in online groups. Participants were represented by either a picture of an avatar (wizard, dragon, etc.), or by text boxes. Using text boxes as representations helped increase normative behaviors, because the text, the authors argued, deindividuated participants in the community. Further, Lea et al. (2001) reported that visual anonymity increased group attraction and self-categorization. Therefore, *greater visual anonymity may strengthen group identification (P4b1)*. In *discursive* anonymity, users communicate but do not have personal identifiers, profiles, pseudonyms, or avatars (Scott, 1999). This should *lower* network translucence (at least of individual network relationships; semantic ones may be visible through conversational threads, hashtags, search results, etc.). In line with the above-referenced early CMC predictions, discursive anonymity may lead to more participation, as it serves to “free individuals from social evaluation and scrutiny, allow for free expression of ideas, and focus attention on ideas rather than on the status of their proposers” (p. 464). However, it may also lead to *less* group identification, possibly due to the sharing of more diverse positions, making it difficult to establish a specific group identity. Hence, *greater discursive anonymity may weaken group identification (P4b2)*.

Discipline

In online communities with greater anonymity, it may be more difficult to establish the trusted relationships necessary for shared CC discipline. *Visual anonymity may have little effect on generative discipline (P4c1)*, as the message content and the users’ identity may still be available. However, *discursive anonymity* (lower network translucence and thus less identified relationships) *may weaken generative discipline (P4c2)*. It may also increase resistance to group norms or attempts to renegotiate them, due to the weakened group identification and greater likelihood of sharing more diverse positions. More subtly, it might also decrease the number of members

likely to enact generative discipline, because there would be fewer familiar relationships (i.e., only between direct and frequent connections).

Persistence

Persistence refers to the extent to which online content and usage behavior remains accessible, retrievable, and reviewable over time (Hampton, 2016; Treem & Leonardi, 2013). Online platforms vary as to whether the content is stored in communication records (such as Facebook timelines, discussion forums, past posts, or conversational threads) or transitory in nature (such as Snapchat stories or temporal 4chan boards).

Autonomy

When online communities display or allow retrieval of online behavior, these communication histories can portray, justify, and reinforce normative behavior over time (Mikal et al., 2014). Persistence could make it more difficult to re-negotiate group norms over time, to the extent that persistent content becomes institutionalized or ritualized (Treem & Leonardi, 2013); thus *persistence may weaken group autonomy (P5a)*. However, institutionalized persistence may also provide a basis for resisting external attempts to reduce group autonomy.

Identification

The more persistence an online environment affords by archiving posts and making them accessible (e.g., through search tools or saved threads), the faster, or at least more effectively, groups may be able to discuss, develop, clarify, negotiate, and shape group norms. The automatic preservation of the collaborative history of a community makes it possible for later members to discern group norms, processes, and decision rules, and shape expectations about community behavior even after some of that history's members have left (Nicholls & Rice, 2017; Ransbotham & Kane, 2011). Thus, *persistence may strengthen group identification (P5b)*.

Discipline

In environments where records are archived or searchable, members can pull up past posts and use these to hold one another accountable. They can also reflect upon prior posters who committed norm infractions, and their content. The types and extent of power and authority function in online communities also have implications for relationships between media affordances and CC. For example, in offline work/closed groups with more institutional power influencing norm creation and enforcement, persistence may take the form of outside influences such as company codes of conduct being used to form the basis of generative discipline. Thus, *persistence may strengthen generative discipline (P5c)*.

Editability

Editability affords members of online communities the ability to craft messages before posting, and to revise or delete content that has been posted by the user or in some cases by others (Ransbotham & Kane, 2011; Rice, 1987; Treem & Leonardi, 2013).

Autonomy

Editability can strengthen a sense of online community autonomy by providing control to the members over content. However, excessive editing may weaken group autonomy. For example, peer-production communities such as Wikipedia provide members with significant control over knowledge creation and retention, allowing them to edit entries and accept or revert changes. However, Ransbotham and Kane (2011) found that Wikipedia content that was edited more heavily after promotion was more likely to be demoted. This implies that excessive editing can have negative impacts on knowledge retention, which may ultimately reduce the amount of autonomy the community has. Thus, *editability may have a curvilinear relationship with group autonomy (P6a)*.

Identification

Editability can allow members to emphasize group identification by providing opportunities to shape content in line with group norms and values and ensure that messages and images (such as logos or memes) reinforce the group's identity. However, excessive and contradictory editing could also weaken group identification. Excessive editability from a small number of individuals can create discursive barriers that hinder the communication needed for members to negotiate group norms. If editability is restricted to those who have legitimized authority in an online environment (such as moderators) then some members can be silenced, reducing their commitment to group norms as well as their group identification. For example, research on Wikipedia has described how conflicts erupted over changes made to articles on sensitive topics (e.g., autism) in which an "emergent in-group" of active contributors would monitor changes to preserve and defend their viewpoint by ganging up on newcomers who attempted to make changes (Kane, Majchrzak, Johnson, & Chen, 2009). Further, development of the Linux Kernel became fragmented and nonconvergent through unmanaged edits until a consistent version control program was finally agreed upon (Shaikh & Henfridsson, 2017). Thus, *editability may have a curvilinear relationship with group identification (P6b)*.

Discipline

Differences in editing ability and permissions may create discrepancies in informal power that can affect CC, and in particular generative discipline. Moderators or administrators may have more or less control over who has permission to view, share, download/upload, and edit, and the extent to which revisions are visible, and reversible, and may thus discipline members to regulate their personal

contributions in ways that satisfy group norms. This generative discipline through the affordance of editing may be influenced by group context, such as leader prototypicality. Therefore, the moderator who exercises more censoring/editing power (up to some level) may increase generative discipline if the moderator strongly reflects group norms (i.e., is prototypical; Giessner, van Knippenberg, & Sleebos, 2009), and members largely agree with the moderator and identify with the group. In contrast, in online communities that have collaborative and participative norms, moderators who censor or edit content or impose too much can challenge or weaken the group norms, or create member resistance, reducing the ability to enact generative discipline. Thus, *editability may have a curvilinear relationship with generative discipline (P6c)*.

Discussion

The initial utopian vision of the Internet as a place for equal participation, inclusive political dialogue, a new public sphere, and exposure to diverse opinions has been counter-balanced by concerns about disinhibition, privacy, surveillance, intimidation, fake news, hate speech, trolling, incivility, and speech regulation (Hiltz & Turoff, 1978; Katz & Rice, 2002; Mihaylov et al., 2018; Shmargad et al., 2021). Dutton (1996) concluded that some of those visions become tenuous without appropriate “rules of order” and norms. Similarly, Watson, Peng, and Lewis (2019) contended that failure to develop and apply effective forms of social control can contribute to the decline and disappearance of online news communities. CC via peer group disciplining is one attempt to manage some of these online community issues. Extending the theory of CC to online environments provides a theoretical explanation for the growing influence of normative pressure and influence in online communities, and helps to increase the applicability and relevance of CC theory. The following sections discuss several implications for theory and future research.

Blurring of Offline/Online Contexts

Online community contexts such as forums and support groups often exist as a virtual oasis for their members, who want to keep these interactions and relationships separate from their offline lives (Rains & Young, 2009; Scott, Rains, & Haseki, 2011). However, many interactions take place across a range of media and face-to-face settings. This blurring of context boundaries is increasingly evident in certain contexts such as virtual teams (Raghuram et al., 2019) and social media (Hampton, 2016; Lane, 2019), or with social movements such as #BLM or QAnon that mobilize online in order to lead to in-person protests. The digital nature of ridesharing services such as Uber provides means for organizational unobtrusive control of drivers through algorithmic management and driver data monitoring (Chan & Humphreys, 2018; Humphreys, 2011). Future research should address spillover effects across online and in-person settings as well as the ways in which members of

similar groups experience CC in both offline and online contexts, and across a range of media platforms. Does this dilute or strengthen CC processes?

The offline and online boundaries between anonymity, visibility, identity, and personalization have also become blurred. For instance, members of social media platforms such as Facebook often know most of their “friends” in person, but increasingly interaction in these spaces is composed of a mix of actual friends, “friends of friends” (which may be strangers to the focal member), algorithmically recommended others, or even bots; some posters are highly identified to each other while others may have limited visual or discursive identity cues. Similarly, members of online communities such as Reddit, forums, or online games may start out as strangers, but develop more personal relationships over time based on continued interactions online, even extending to in-person interactions and user conferences (Lai & Fung, 2020). Future research should assess the ways in which CC processes change and evolve over time as the level of anonymity changes or decreases.

Online Media Affordances and Multi-Mode Online Communities

Future research should also consider more detailed analyses of how other affordances (Rice *et al.*, 2017) influence the emergence and form of CC in online communities, though visibility, persistence, and editability seem the most relevant for this context. Related to affordances is the range of media modes used by an online community. As noted initially, this framework primarily assumes traditional text-based online communities. However, digital activities may incorporate multiple modes. Indeed, persuasion and norm compliance in online settings (computer games, virtual worlds) that are not purely text-based was discussed by Guadagno and Cialdini, (2009) over a decade ago. For example, online music communities take advantage of user-generated content provided through YouTube music videos and their associated discourse threads and “likes” (as well as wikis, blogs, podcasts, social media, and Q&A databases) to support participatory culture for music learning and teaching (Waldron, 2013). Similarly, online games involve communities using a variety of rich media (Liao, Huang, Cheng, & Teng, 2020). The extraordinary growth in use of web-conferencing systems (such as Zoom or Microsoft Teams) as a response to COVID-19 lockdowns and social distancing has integrated video and audio into online communities (albeit with many affordances and constraints; Hacker, vom Brocke, Handali, Otto, & Schneider, 2020). Thus, an area for future research would be to consider how other affordances interact with CC mechanisms, and how some of the propositions may change in multi-media online community contexts.

Theorizing Power, Control and Resistance

The original formulation of CC theory (Barker, 1993) did not much consider resistance, as CC systems were so strong as to produce buy-in from members. Barker’s

study was particularly interesting because team members were so caught up in forming and exerting control, without being fully aware of their intents and practices, that they did not see the need to resist.¹ Subsequent research has focused more on control-resistance dialectics over time (Mumby, 2005; Zanin & Bisel, 2020). Future research should complicate notions of power by examining the ways in which online community members engage in the negotiation of control and the consequences of resisting peer disciplining efforts, as well as the ways in which tensions between control and resistance, individual and group autonomy, and supportive and controlling elements of CC play out (e.g., Gibbs *et al.*, 2019). Venues for online resistance that also involve internal CC include counter-institutional websites such as RadioShackSucks.com (Gossett & Kilker, 2006) and Uberpeople.net, a website for sharing information and experiences related to Uber drivers and their work (Karanovic, Berends, & Engel, 2018). Future research should further unpack the paradoxes and tensions in CC.

The concept of a singular group identification typically assumed in offline CC research is problematic when, as noted above, users can participate in multiple online communities, often at the same time, and through multiple identities (Marwick & boyd, 2020; Nicholls & Rice, 2017; Szulc, 2019), with variations in autonomy, identification, and discipline across their online memberships (Nicholls & Rice, 2017). Interestingly, participating in multiple but related online communities and thus group identifications may also provide opportunities for concertive resistance (Zanin & Bisel, 2020).

Finally, we emphasize that CC processes are inherently political in that they involve attempts to influence and control others in service of certain goals and values. Interestingly, however, the dominant group values and norms may vary such that CC attempts range from enhancing social justice (#CommSoWhite, the Communication Scholars for Transformation Facebook group) to perpetuating oppression and White supremacy (Daily Stormer, Parler, QAnon). While work-based online communities (e.g., Shaikh & Henfridsson, 2017) are likely to be less political than non-work communities (e.g., Nissenbaum, & Shifman, 2017), extending CC theory to online environments provides a new lens for understanding political polarization and the processes through online groups engender conformity and suppress dissent or divergent viewpoints among their members.

Conclusion

This article provides three primary contributions. The first is increasing the applicability of CC theory by expanding its possible contexts to combinations of online/offline, work/non-work, and closed/open membership contexts, beyond the traditional confounded single context of offline/work/closed. The second is increasing our understanding of CC processes by showing that CC is likely to develop in online communities through the same mechanisms of group autonomy, group identification, and generative discipline, although these mechanisms may operate somewhat

differently in online/offline, work/non-work, and closed/open contexts. The third is proposing how these mechanisms may interact with three prominent media affordances: visibility (including anonymity), persistence, and editability. Extending CC theory to online communities helps to explain the processes through which online normative group pressures operate, of great relevance in our increasingly culturally and politically polarized society. We encourage empirical research testing the arguments and propositions developed here .

Notes

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