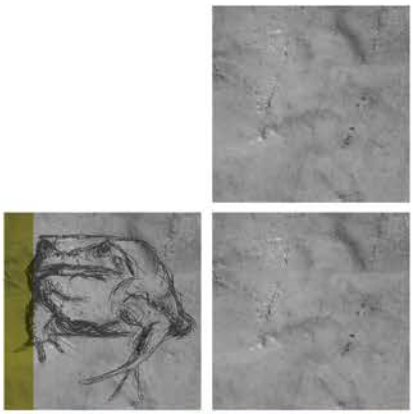

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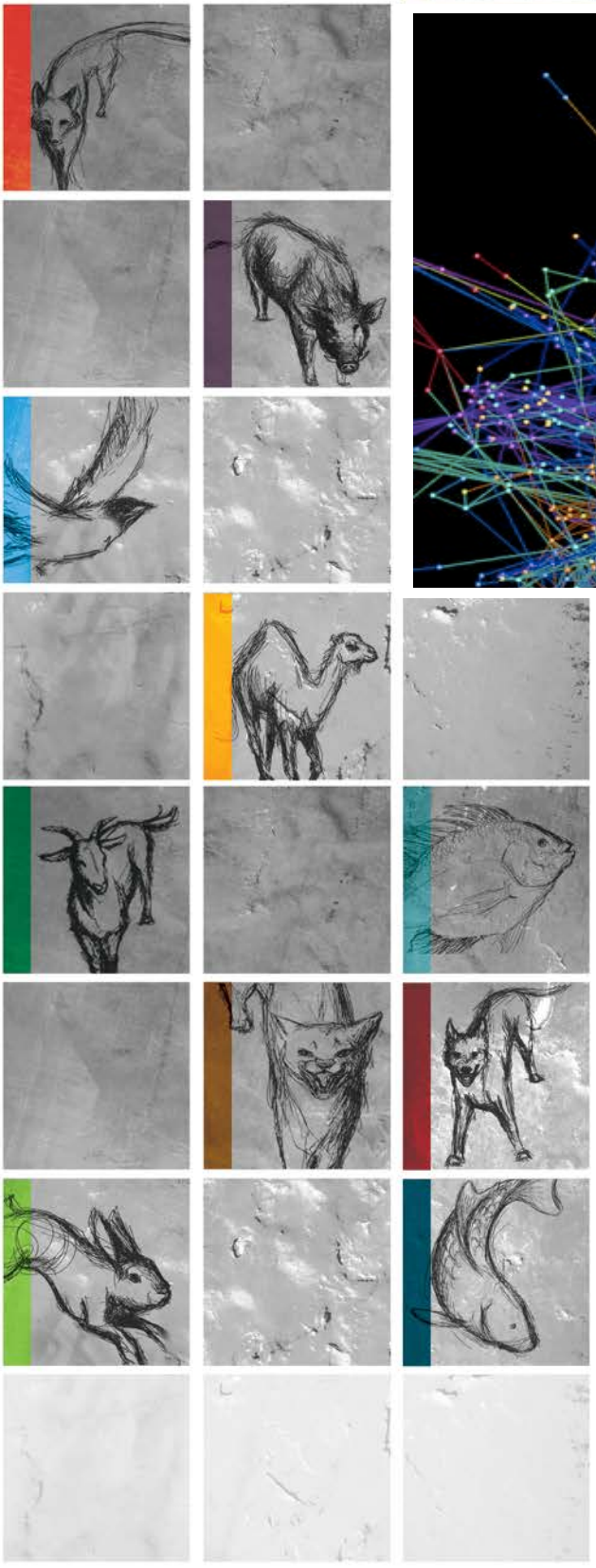

Community Development Online: A Review of Best Practices for Engaged Collaboration

Bruce Balfour and Professor Theodore R. Alter

PennState

Invasive Animals CRC

Australian Government
Department of Industry and Science

Business Cooperative Research Centres Programme

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2016

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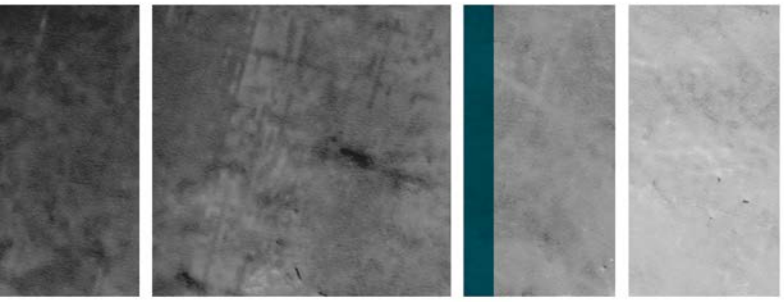


Published by: Invasive Animals Cooperative Research Centre.

Telephone: (02) 6201 2887

Facsimile: (02) 6201 2532

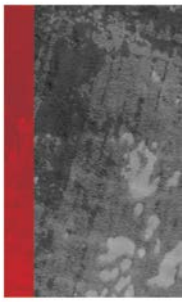
Email: contact@invasiveanimals.com

Internet: http://www.invasiveanimals.com | http://www.pestsmart.org.au/

Web ISBN: 978-0-6480088-1-1

The IA CRC gratefully acknowledges funding support from the Australian Government through its Cooperative Research Centres Programme.

This document should be cited as: Balfour, B. and Alter, T.R. (2016). *Community Development Online: A Review of Best Practices for Engaged Collaboration*. PestSmart Toolkit publication, Invasive Animals Cooperative Research Centre, Canberra, Australia.



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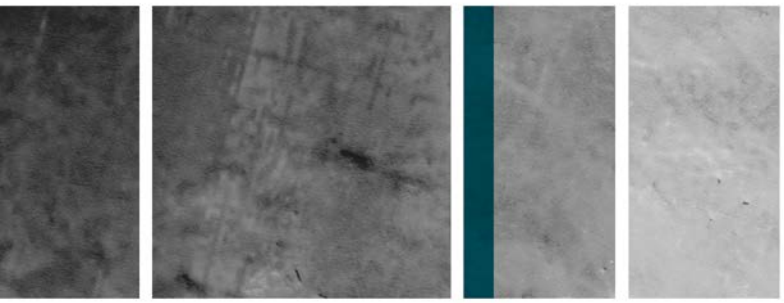
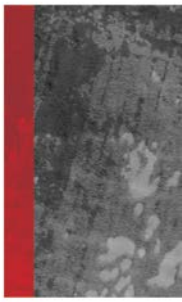


Abstract

Is there a better way to develop engaged online communities for collaboration? Are there any differences in efficacy between the development of community and collaborative capacity online versus face-to-face (FTF) engagement? If FTF is considered to be the "gold standard" for group interactions, factors related to social presence, trust development, and communications medium also play a role in designing an effective online community environment. This research reviews theory from the sociological, computer-mediated communication, information systems, civic engagement, small group behavior, social psychology, resource management, and organizational behavior literature as it relates to online community development and suggests how it can be applied to the design of online communities seeking collaboration or civic engagement for collective action.

Keywords: computer-mediated communication, online communities, group identity, civic engagement, collective action

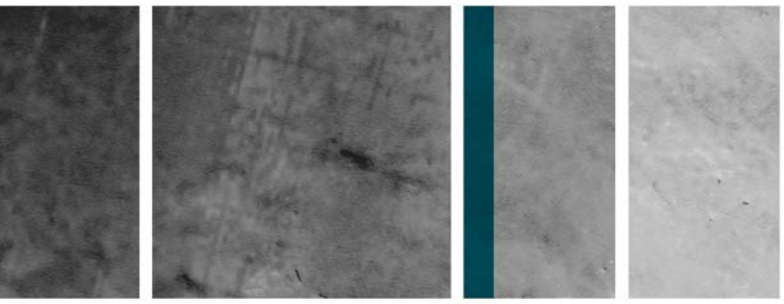


Introduction

As options for virtual communication continue to grow and evolve, organizations and groups struggle to find the best means for interaction and collaboration among themselves and their external audiences. Agencies seeking to work with the public or increase civic engagement may not always be able to arrange face-to-face (FTF) meetings, particularly when they're trying to cover a large territory or dispersed population. Web-based communication, videoconferencing, and audioconferencing are cheaper and more convenient compared with travel to meet FTF, but the quality of virtual collaborative engagement and outcomes may suffer. Online communities provide an asynchronous option for group participation, but they survive or fail depending on the levels of participation and commitment by their membership. While it may seem a simple task to build an online community, most such efforts by businesses fail to achieve a critical mass of membership despite high levels of investment (Worthen, 2008). As noted by Ren et al. (2012), books and websites are available that describe how to build an online community that will attract and retain members, but these sources often fail to support their suggestions with a theoretical rationale or evidence-based reasoning. Community development goals also tend to vary between emphasizing the creation and maintenance of social relationships or building a group identity around collaboration/collective action.

Theory from the social science literature and empirical research has only recently been applied to understanding collective identity, attachment, engagement, and other social behaviors that can improve the chances for online collaboration and community success (e.g., Ray et al., 2014; Sunderland et al., 2013; Ren et al., 2012, 2007; Bateman et al., 2011; Wilson et al., 2006; Wainfan & Davis, 2004). While there have been some studies of civic engagement supported by Internet connectivity, these have often been extensions of research into participatory or community social capital (Lin, 2001; Mesch & Schwirian, 1996), and community social networks (Mesch & Talmud, 2010; Kavanaugh et al, 2005; Carroll & Rosson, 2003).

Is there a better way to develop engaged online communities for collaboration? Are there differences in efficacy between the development of community and collaborative capacity online versus FTF engagement? If FTF is considered to be the "gold standard" for group interactions, factors related to social presence, trust development, and communications medium also play a role in designing an effective online community environment. This research reviews theory from the sociological, computer-mediated communication, information systems, civic engagement, small group behavior, social psychology, resource management, and organizational behavior literature as it relates to online community development and suggests how it can be applied to the design of online communities seeking collaboration or civic engagement for collective action.



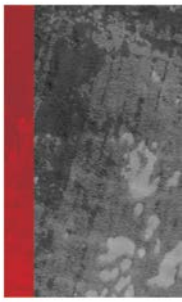
Community and Collaboration

Community has never been easy to define. The sociological literature had about ninety-four pre-Internet definitions of community as of 1955 (Hillery, 1955), although most of these referred to the common elements of place, relational ties, and social interaction. Kaufman (1959) and Wilkinson (1991) viewed the social interaction process itself as the source of mutual identity that contributes to local life in shared territory and gives structure to collective actions. Post-Internet, Theodori (2005) refers to "territory-free" communities of social groupings or networks, such as the business community or the academic community. More recent community definitions have decreased the emphasis on geographic space to account for technology-mediated interactions that do not require physical co-presence to establish ties of affective commitment (Fine, 2012; Hellekson, 2006; Zhao, 2003; Hills, 2002; Jenkins, 1992). Preece (2000) defines an online community as an Internet-connected collective of people who interact over time around a shared purpose, interest, or need. This last definition is also complementary to the term, "community of practice (CoP)," which connotes a group of like-minded people, often professionals, whose purpose is to support each other and deepen their knowledge through ongoing collaboration, often with electronic communication support (Wenger et al., 2002; Andrews, 2002). Regular interactions of community members lead to a shared identity and a cohesiveness that allows the community to sustain interactions over time (Assimakopoulos & Yan, 2005). Shared group interests imply boundaries among groups, and these boundaries along with group identification and interaction produce community (Fine, 2012). Ren et al. (2012) also differentiate between online communities where members have a common purpose versus those that primarily foster interpersonal ties. In this paper, "online community" will be used because it is the most common term, and will be applied both to communities of practice and other online communities that seek to engage the public but do not primarily exist to foster interpersonal ties.

This paper is not intended to address specific communication technologies or platforms, such as social media, although we include the literature relating to mediated effects on social presence, influence, trust, and related topics compared to FTF communication. When we refer to communication tools for collective action, we are referring to Internet or "virtual collaboration," in which the "people working together are interdependent in their tasks, share responsibility for outcomes, are geographically dispersed, and rely on mediated, rather than FTF, communication to produce an outcome" (Wainfan & Davis, 2004, p. xi). Our discussion also covers advantages and disadvantages among offline (face-to-face), online, and multiplex (multi-modal) communications for collaboration and online community development. However, first we should consider whether distance between collaborators is still an issue.

Reports of the "Death of Distance" Have Been Exaggerated

Distance remains a barrier to fully engaged interaction. Despite earlier predictions of the "death of distance" after new communication technologies were introduced (Wellman, 2001; Cairncross, 1997; Martin, 1996; Mee, 1898), communication, organizational, and spatial studies continue to emphasize the importance of FTF interaction to promote collaboration and innovation (Healy & Morgan, 2012; Wineman et al., 2009; Allen & Henn, 2006; Allen, 2007; Wainfan & Davis, 2004; Baltes et al., 2002; Olson & Olson, 2000; Mayer, 1993; Biksen & Eveland, 1986; Spiliopoulou & Penn, 1999). Frequency of interaction is also important for developing and maintaining trust, social capital, and collaboration in communities. Allen

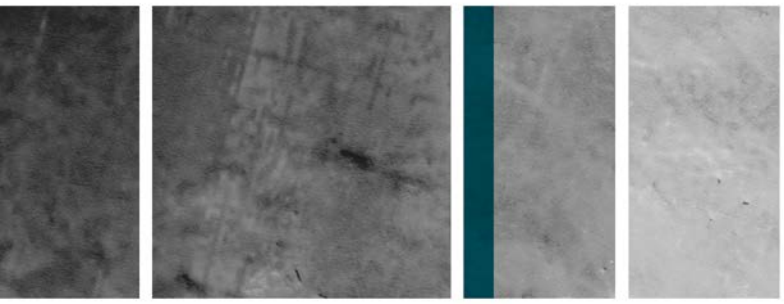


(2007) notes that the frequency of all communication media usage, including e-mail and the telephone, declines with separation distance between individuals and that the more often we see someone FTF, the more likely we will also telephone and e-mail them. Spiliopoulou and Penn (1999) note that e-mail and telephone communication can link remote workers with their colleagues in the office, but these forms of communication are best for specific kinds of task completion and do not support an environment of innovation, which has a greater dependence on informal FTF meetings to generate new ideas and collaborations (Wineman et al., 2009).

Moving up the interactivity scale, videoconferencing technologies provide meeting attendees with greater social presence. Social presence theory describes how variations in communications media affect the perceived presence/reality, immediacy/intimacy, and influence, of the individual (Short, Williams & Christie, 1976; Wiener & Mehrabian, 1968; Argyle & Dean, 1965). Gunawardena (1995) refers to social presence as "the degree to which a person is perceived as a real person in mediated communication" (p.151). As an example, while videoconferencing presents a greater social presence than teleconferencing, eye contact, body language, and gestures used FTF to coordinate conversation and convey meaning are often lost in a videoconference (Wainfan & Davis, 2004). On a typical laptop videoconference, for example, the user tends to look at the screen for eye contact and other signals among the group, while the typical laptop camera presents an image to the group of the user looking down as if they were avoiding eye contact (or sleeping). In addition, studies of videoconferencing versus FTF meetings have demonstrated that consensus tends to form more readily between those who are physically co-present in a meeting room, and that remote attendees are viewed by those sharing a room as "outsiders" with less credibility or influence (Wainfan & Davis, 2004; Cramton, 2001; Walther et al., 2001). While it is not always possible for all meeting attendees to be co-present, mitigation strategies to handle virtual communication challenges can be used to improve collaborative experiences and outcomes in asynchronous online communities, and these will be discussed later in this article. For more detail on the challenges of collaboration and mitigation strategies using audioconferencing, videoconferencing, and synchronous computer-mediated communications, see the report by Wainfan and Davis (2004).

When decision-making is required, communications mediated by technology present challenges that can limit both influence effects and consensus building (Bazarova & Yuan, 2013; Wainfan & Davis, 2004; Strauss, 1997; Baltes et al., 2002). A meta-analysis by Baltes et al. (2002) found that it is unusual for virtual groups using communications technologies to make better decisions than their FTF counterparts. Murthy and Lewis (2015) found that, in the combined use of FTF meetings and social media for collaboration among a life science organization, there was no consensus on the efficacy of social media for collaboration, and that social media were used primarily for one-way information dissemination. Despite increased social presence of virtual teams operating in online virtual world environments, such as *Second Life*, Pridmore and Phillips-Wren (2011) found that these teams took longer to reach decisions, although their decision quality was better than FTF teams. However, training people to interact in the virtual world environment took longer compared to using other technology platforms.

Online communities have issues in terms of limited social presence, and communications among a group are typically asynchronous, which also limits immediacy, even when those communications are part of a virtual collaboration. In general, virtual teams perceive more difficulty communicating nonverbally compared to FTF teams (Cramton, 2002). Some of these issues relate to social presence mediated by technology, which we discuss below. Online communities are also dependent on contributions of shared knowledge by members (Ren et



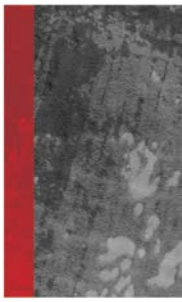
al., 2007; Chen et al., 2010). When these contributions are provided in a voluntary online context, especially when identities are masked via informal screen names, the lack of social obligations can result in social distance and low normative pressure to reciprocate for the benefit of the community (Ray et al., 2014; Algesheimer et al., 2005; Rafaeli et al., 2004; McAlexander et al., 2002; Muniz & O'Guinn, 2001). To maintain an engaged online community, members essentially have to create value with a level of effort similar to paid employees (Yen et al., 2011).

In their longitudinal study of highly networked communities, Kavanaugh et al. (2005) found that people who interact online usually know each other already from a geographic FTF context, or expect to encounter each other FTF eventually. Similarly, people in geographic communities get to know each other FTF, then maintain contact through communication technologies. When the geographic community has high Internet penetration, online communications are used for information exchange and to supplement FTF social contact. Koh et al. (2007) suggest that offline communities be migrated to online communities to expedite critical information and knowledge sharing, and others have discussed the advantages of building integrated online communities around existing offline communities (Barab et al., 2003; Kling and Courtright, 2003). Matzat (2010) agrees on the benefits to online/offline integration, noting that the entire community does not have to participate in FTF meetings for such an integration to be successful through improved sociability, increased trust, and reduced free rider/lurker behaviors online.

Whether we are discussing dispersed populations, remote rural communities, or communities of practice, our focus on collaboration and civic engagement online readily lends itself to exploring small group behaviors. We now consider theory related to the importance and function of small groups to foster collective action in successful online communities.

Small Groups and Social Cohesion Foster Collective Action

The link between small groups and social cohesion to effect social change has been demonstrated to be a powerful catalyst for developing viable, healthy communities (Guetzkow, 2002; Williams, 1995). Small groups, as meaningful social units, are noted in democratic theory for their ability to socialize individuals in the value systems and behavioral norms of civil society, using group dynamics to embed citizens in communities, associations, and institutions (Fine, 2012; Harrington & Fine, 2000, Putnam, 2000). As public venues for social attachment, small groups become the intermediary between the individual and society at large (Fine, 2012). In this bounded civic space outside the immediate circle of family and friends, a person's identity merges with those of interaction partners to form a modified public identity in which responsibilities for community well-being are shared and collective action can be organized (Boyte, 2004; Walzer, 1992; Back & Polisar, 1983; Arendt, 1972). Mathews (2014) refers to the "micropolitics of democracy" (p.28), in which citizen groups have the power of significant ideas, collective effort, pervasive associations, and the generation of hope. Norms are established and reinforced through small groups that develop a shared vision and engage in collective action, prompting a stronger sense of community and trust (Mandarano, 2009; Flora & Flora, 2003). Although individuals seek to maximize achievement of their desires and needs, group membership is valuable if the individual receives enough perceived benefit (Fine, 2012). Ellickson (1991) cites cases where community expectations of group cooperation exerted enough social control so that small groups of farmers and ranchers could resolve conflicts through negotiation instead of using the legal system.



Mandarano, Meenar, and Steins (2010) provide examples of digital civic engagement for collaborative city and regional planning. Melbourne, Australia used a public wiki for feedback on its ten-year Future Melbourne plan (City of Melbourne, 2009, 2008). Without needing to attend FTF meetings, 131 members of the public edited and commented on the plan over a month in 2008, making over 11,500 revisions, while another 7,000 visitors viewed the informational materials. In Norfolk, England, public participants ranked appropriate sites for wind farms using a variety of criteria in a Web-based Geographic Information System (GIS) application (Simaoa, Densham & Haklay, 2009). In British Columbia, Canada, the Ministry of Environment engaged the public in land use planning with a Web-based GIS tool called MapChat that allowed both synchronous and asynchronous recording of comments and discussion of digital map features (Hall et al., 2010). This last example has the benefits of community asset mapping in establishing a common view among residents about the importance of local features, broadening community thinking, and appreciating the values of others (Fuller et al., 2002). Researchers at Pennsylvania State University in the USA partnered with local government in 2015 to test a GeoDeliberation tool for civic engagement and spatial decision making through GIS-referenced online discussion. The downside to digital engagement tools is limited access to computers or the Internet by disadvantaged populations (Carver et al., 2001).

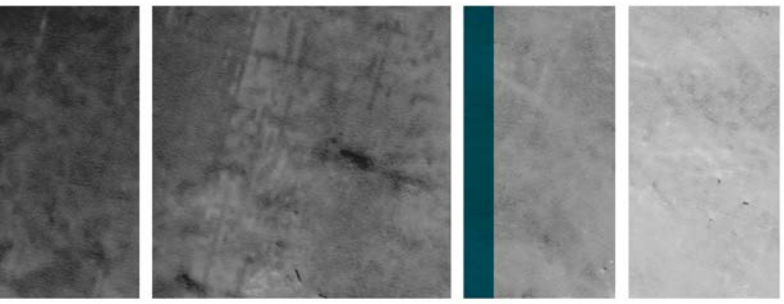
When small groups collaborate to improve communities, they build democracy in a more meaningful way than individuals who exercise their right to vote, sign a petition, or engage in other activities requiring a low level of effort or participation (Boyte, 2004). When these groups are able to mobilize resources—through recruiting, raising money, or gaining the support of local elites—they can promote social change (Fine, 2012; Boyte, 2004; Wilkinson, 1999; McCarthy & Zald, 1977). Olson (1965) also observed that effectiveness of a group to implement social action relates to this ability to mobilize resources while motivating and managing participation so that all members are engaged in the group activity, limiting effects on the group by free riders.

Online communities also have free riders, or *lurkers*, who read messages but do not contribute content themselves. While lurkers are often dismissed as unimportant (Meyer & Allen, 1997), some authors note that many online communities are supported by advertising, and that revenues to the community are higher when there are more eyeballs seeing those ads, so the lurkers actually help support the community by boosting traffic statistics even without contributing content (Bateman et al., 2011; Butler, 2001). An important point is that online communities depend on voluntary participation, so the individual chooses when to come and go or participate in discussions (Moon & Sproull, 2008). While many online visitors may remain transient, perhaps only seeking an expert answer to a single question (Lampel & Bhalla, 2007; Arguello et al., 2006), others will return often, contribute content, and develop attachment to the online group (Blanchard & Markus, 2004; Constant et al., 1996, 1994; Lee & Cole, 2003; Bagozzi & Dholakia, 2002; Wasko & Faraj, 2000).

Having discussed the roles of small groups, social cohesion, and civic engagement for collective action, the issue of trust development becomes critical in the development of online relationships where the medium limits social information exchange. In the following sections, we describe issues related to trust in distributed groups and how the goals of civic engagement can be furthered through the development of group identity.

Trust in Distributed Groups

Trust is critical for a group to be effective (Wilson et al., 2006; Poole, 1999; Handy, 1995), but trust develops more quickly when people often see each other FTF so that nonverbal cues

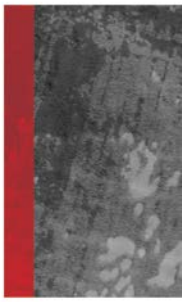


can be seen and interpreted (Hill et al., 2009; Burt & Knez, 1996; Lewicki & Bunker, 1996; Orbell & Dawes, 1991; Wichman, 1970). The exchange of social information is important for interpersonal trust development, and this is also true for distributed groups such as online communities (Ren et al., 2007; Kavanaugh et al., 2005; Gulati, 1995; Zucker, 1986). Distributed group coordination can be more complex than FTF, so team members may isolate tasks and responsibilities to reduce interaction (Galegher & Kraut, 1992). If a team starts with low trust, this lack of interdependence may limit trust development (Wilson et al., 2006; Rousseau, 1995).

Wilson et al. (2006) studied the impact of decreased social information on trust development among distributed teams compared to FTF teams. Their findings indicate that the communication medium does affect the rate at which trust develops among teams with no prior familiarity, but that comparable levels of trust could be achieved in both types of teams—it just takes longer with distributed teams (Wilson et al., 2006). Other studies have shown that online collaborators failed to achieve levels of trust comparable to FTF, videoconference, or audioconference users, and that the minimal social presence effect in online communities also made it easier to intentionally deceive group members (Burgoon et al., 2003; Bos et al., 2002). Given sufficient time, virtual team members may develop cohesion if they exchange enough social information (Chidambaram, 1996; Chidambaram & Bostrom, 1993), although this exchange may be prevented due to privacy policies or controlled to emphasize group identity development over individual relational bonds, as explained in more detail below. As with early meetings of FTF teams, distributed groups gain an initial trust and performance advantage when members have had prior personal contact (Hill et al., 2009; Wilson et al., 2006, 2001; Kavanaugh et al., 2005; Harrison et al., 2003). Lack of influence and trust due to social presence limitations online are mitigated when community members already know each other offline and when they know they are likely to soon meet FTF again (Kavanaugh et al., 2005). Rohe (2004) observed that civic engagement leads to new relationships, those relationships lead to greater trust, trust leads to collective action for social and individual benefits, and this can then lead to more civic engagement. This brings us to the question of how to foster online collaboration and knowledge exchange through both the development of community commitment and a communal identity that takes precedence over individual self-interest.

Building Commitment and Community Identity to Foster Knowledge Contribution

Meyer and Allen (1991) observed that organizational commitment is a psychological state that characterizes the relationship between an individual and an organization, determining whether someone wants to remain attached to the organization. The three components of organizational commitment are: 1) *Affective* commitment, the emotional attachment to, identification with, and involvement in an organization—when the individual wants to remain attached; 2) *Continuance* commitment, when the individual needs to remain attached because they are aware of the high costs of leaving; 3) *Normative* commitment, when the individual feels that they ought to remain attached due to feelings of obligation. These three components can all be experienced to varying degrees by the same person. While much of this research has focused on organizations with employees, commitment theory was originally developed to explain volunteer behaviors at nonprofit organizations (Boezeman et al., 2008; Dailey, 1986; Becker, 1960), and has more recently been applied to member behavior in online communities (Bateman et al., 2011; Kang et al., 2007; Wasko & Faraj, 2005; Herrmann et al., 2004). We focus on affective and normative commitment because study findings on continuance commitment have shown little or no correlation with behavior in volunteer



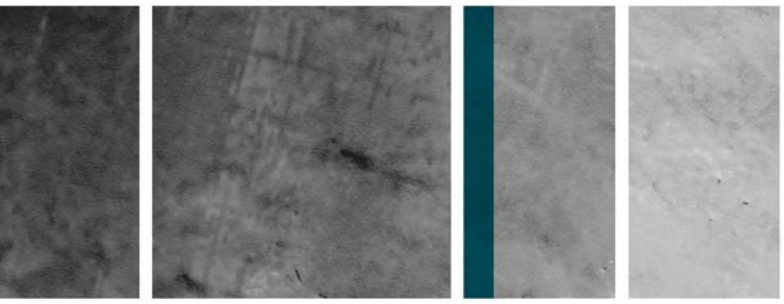
organizations, and online communities by extension (Stephens et al., 2004; Liao-Troth, 2001). Boezeman et al. (2008) also note that individual pride in nonprofit organization membership and respect from the organization are positively associated with affective and normative commitment by volunteers. Vecina et al. (2008) observe that strength of affective/normative organizational commitment among nonprofit volunteers, versus paid work engagement, predicts intention to remain attached to a nonprofit.

Group members who feel strong affective commitment to a community are more inclined to help other members and reply to postings (Boezeman et al., 2011; Grant, 2007; Fisher et al., 2006; Blanchard & Markus, 2004; Wellman & Gulia, 1999), counteracting attention-conserving behaviors that often limit individuals from providing assistance to strangers (Noddings, 1984). Online community members with strong normative commitment feel loyalty, and perhaps obligation to repay the group for benefits they have received (Wasko & Faraj, 2005; Ridings et al., 2006; Constant et al., 1994). A normative commitment may be strong enough to prompt members to support the community at the expense of time or resources that may not be offset by direct benefits to themselves (Oreg & Nov, 2008; Hall & Graham, 2004; Wasko & Faraj, 2000).

Members who contribute to online communities are driven by a sense of engagement (Ray et al., 2014; Bateman et al., 2011; Ma & Agarwal, 2007; Wasko & Faraj, 2007; Kahn, 1990). However, online community engagement is not the same as community commitment. Commitment relates to the relationship between an individual and a group in which they are a member, determining whether they wish to remain attached to the group, while engagement refers to an energizing psychological state leading to prosocial participation that benefits others in a group (Ray et al., 2014; Bateman et al., 2011; Chen et al., 2010; Algesheimer et al., 2005; Kahn, 1990). While some authors also suggest that reciprocity and obligation are primary drivers of online community behaviors (e.g., Wasko & Faraj, 2000; Preece, 1999), recent analyses by Bateman et al. (2011) suggest that these drivers are less important methodological artifacts, and obligation should be considered a component of affective commitment.

Common (group or communal) identity theory helps us to understand behavior in online communities where members share a common purpose, as opposed to communities that primarily exist to foster interpersonal ties (Ren et al., 2012, 2007; Ray et al., 2014). When self-identity overlaps with the community's values, positive traits, and abilities, it manifests as a modified community identity (Postmes et al., 1998; Ellemers et al., 1997; Reicher et al., 1995; Bhattacharya et al., 1995; Tajfel, 1974), fostering collective action and shared responsibility for community well-being (Boyte, 2004; Walzer, 1992; Back & Polisar, 1983; Arendt, 1972).

Communal identity, along with knowledge expertise, allows a sense of engagement to grow, prompting knowledge contribution (Ray et al., 2014; Chiu et al., 2006; Wasko & Faraj, 2005). A sense of group identity, rather than being focused on relationships with individual members, promotes attachment behaviors needed for the survival of online communities, such as sharing knowledge in return for knowledge consumption (Ray et al., 2014; Nahapiet & Ghoshal, 1998), recruiting new members, and retaining members (Ren et al., 2007). Group identification helps the individual to understand their social environment (Tajfel, 1974) and distinguishes them from outsiders, deriving satisfaction through interactions that maintain their social identity as representatives of the group's norms and values (Ray et al., 2014; Stets & Burke, 2000; Ashforth & Mael, 1989). Community identification makes members feel that they are furthering personal goals through voluntary contributions (Ray et al., 2014; Algesheimer et al., 2005).



Ren et al. (2012) note that identification with a group can be fostered by: 1) Assigning members to a named group or labeling them as being in the same category (Turner et al., 1987; Turner, 1985; Tajfel et al., 1971); 2) Downplaying personal attributes, thereby depersonalizing members in favor of representing them as part of the group; 3) Emphasizing homogeneity as part of an in-group, or within-group similarities, over individual differences; 4) Highlighting group boundaries to define an in-group and competition with outsiders; 5) Repeatedly promoting awareness of group news, status reports, and activities to build familiarity and group attachment.

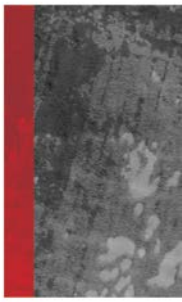
Gunawardena (1995) states that moderators play a critical role in creating a sense of community in an online setting. Whether formally designated as moderators/facilitators or acting informally, proactive members may assume the leadership role of maintaining social cohesion and group norms by encouraging and facilitating conversations, keeping those discussions on topics valued by the group, cross-referencing or summarizing posted content, managing disputes, and propagating group news (Bateman et al., 2011; Butler et al., 2007; Lampe & Resnick, 2004; Burnett & Bonacci, 2003; Kollock & Smith, 1996; Gunawardena, 1995). Moderators help to establish and maintain the boundaries of acceptable behaviors, promoting constructive discussions while discouraging those that are disruptive, and this maintains social cohesion (Bateman et al., 2011; Burnett & Bonacci, 2003; Bergquist & Ljungberg, 2001). As noted by Bateman et al. (2011), informal moderating behaviors can be encouraged by building group identity and highlighting stories of members who loyally support the group and are admired as a result. While acknowledging that constraints on content can limit the appeal of an online community to those who want to exchange more personal information, which would also undercut group identity, Ren et al. (2007) observe that all members can provide a moderating function when the online community platform provides an ability to rate forum message posts for relevance and quality. While collaborative, communal-identity based communities are not primarily intended to develop personal ties online, alternative means of personal communication, including off-topic posting areas if warranted, can serve this function (Ren et al., 2007). Periodic FTF interactions among group members can also serve to build sufficient relational ties for successful community engagement online, as noted earlier in this article.

In a sense, moderators manage and facilitate the creation of social capital in an online community. FTF interaction is not a requirement for Putnam's definition of social capital, but FTF interactions are more likely to result in the exchange of aid and shared social connections when compared to friends/acquaintances who primarily engage in computer-mediated interactions (Katz et al., 2004).

We have discussed the sources of community commitment, sense of engagement, group identity development, and the mediator role. We now expand on these concepts with regard to the benefits and disadvantages of collaborative interactions in both physical and virtual space.

Offline, Online, and Multiplex Relationships for Online Community Collaboration

Numerous authors have suggested that trusted relationships among new collaborative group members are more easily established through initial FTF meetings, after which virtual communication can maintain relationships (Hill et al., 2009; Wainfan & Davis, 2004; Bluemink & Jarvela, 2004; Kleine Staarman, 2003; Cramton, 2002; Zheng et al., 2002; Zielinski, 2000; O'Hara-Devereaux & Johansen, 1994; Nohria & Eccles, 1992). Longitudinal analysis by Sessions (2010) determined that ongoing "multiplex" relationships, combining both offline and online

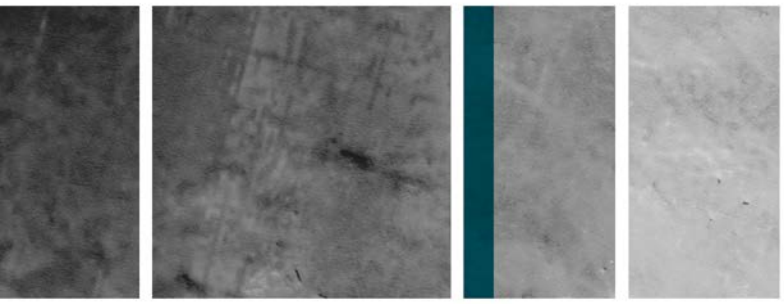


contacts, increased member engagement with the online community. Etzioni and Etzioni (1999) determined that a combination of the two communication modes is most effective at developing community. Other studies determined that formation and active participation in online communities, in addition to FTF meetings, is associated with increased civic participation and an increased sense of community attachment (Matzat, 2010; Mesch & Talmud, 2010; Dannecker & Lechner, 2007). A lack of FTF interactions among distributed virtual teams may lead to online interactions driven more by self-interest than community benefit, and this can limit the development of bridging social capital (Sessions, 2010).

As observed by Haythornthwaite (2005), online collaboration challenges include dealing with the evolutionary nature of work practices, knowledge transfer, and shared learning. In effect, online communities create the type of "third spaces" (Oldenburg, 1999; Gutierrez et al., 2000) where individuals interact to develop new vocabularies, shared meanings, emergent knowledge, the co-evolution of effective collaborative practices, and a sense of community. Through examination of online communities, we also learn more about how interactions in both physical and virtual spaces can be combined to enhance collaborative outcomes.

Sunderland et al. (2013) argue that multiplex communities, combining offline and online interactions, are notable for their value to collaborative initiatives among geographically dispersed populations or those divided by perceived organizational or disciplinary boundaries. FTF interactions of geographically distributed virtual teams can strengthen personal ties, and may promote new ties that may not otherwise have formed online (Murthy & Lewis, 2015; Katz et al., 2004). This effect may also be mediated by personality, since those who are apprehensive about interacting in social settings may participate more in an online community setting and reveal more about their authentic opinions and selves (Murthy & Lewis, 2015; Bazarova & Yuan, 2013; Correa et al., 2010; High & Caplan, 2009; McKenna, 2007; Bargh, McKenna, & Fitzsimons, 2002; Postmes et al., 2002). This empowering effect of online interaction may be a result of reduced social risks and expectations, allowing those who are more introverted some freedom from social constraints experienced in FTF settings (Bazarova & Yuan, 2013; Amichai-Hamburger et al., 2008; McKenna & Tal, 2008). A related equalization effect has been shown to reduce social status inhibitions in group interactions when comparing FTF and online communication, resulting in more equal contributions from all team members (Bazarova & Yuan, 2013; Dubrovsky et al., 1991). A meta-analysis by Rains (2005), comparing FTF and virtual team behaviors, found that virtual teams showed a more positive effect on minimizing member dominance while maximizing participation and influence.

Kavanaugh et al. (2005) note that community attachment and engagement can be enhanced through combined offline/online interactions, but that these benefits tend to accrue to those who are already well connected, extroverted, well educated, and have a strong sense of group identity. Sunderland et al. (2013) note that this highlights concerns about disadvantaged community members who are isolated, lack access, do not identify with the community group, have lower levels of education, or lack training in Internet use. An example of this problem is in Australia, where farmers in remote areas have access to the Internet, but indigenous people have less access to Internet connections or technological facilities and often lack training in how to use the Internet (McCallum & Papandrea, 2009). If Internet access is a problem, a possible solution is to provide access through libraries, municipal buildings, street kiosks, or other public locations in the community, and these can provide online platforms for community building and engagement (Sunderland et al., 2013; Kavanaugh et al., 2005; McCallum & Papandrea, 2009). Wikis and blogs may be the easiest facilitation tools for online interaction among disadvantaged groups who do have Internet access (Kavanaugh et al., 2005). Preece (2000) also notes the importance of taking a community-



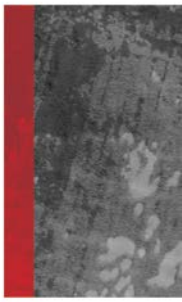
centered design approach, working with the community to establish trust and usefulness to meet local needs in the development of new online communities. Strategies for delivery and collaboration mechanisms enabled by online technologies should to be adapted to regional conditions, needs, and socioeconomic structures (Alter et al., 2015).

Group identity, attachment, and cohesiveness of long-term virtual teams can also be enhanced through periodic FTF collaboration (Wainfan & Davis, 2004; Walther et al., 2001; Slevin et al., 1998; Brown, 1995; Kiesler & Sproull, 1992). When online contact without any FTF contact is the only option, trust development will take longer, which can affect both team performance and community attachment (Ren et al., 2012; Wilson et al., 2006). Wainfan & Davis (2004) note that empirical findings by social cohesiveness researchers often show lower cohesion in online communities along with conformity to in-group norms. McCully et al. (2011) observe that sub-group formation and disconnection from the broader community may be deterred when offline meetings supplement online community interactions. However, lack of consistent interaction with the online community can also lead to a loss of social cohesion resulting from fragmentation when members primarily meet with other members offline, essentially forming sub-groups (Sunderland et al., 2013; Kavanaugh et al., 2005).

Wainfan and Davis (2004) consider the nature of virtual and FTF collaborations, noting the Baltes et al. (2002) meta-analysis finding that computer-mediated groups rarely make better decisions than their FTF counterparts, and suggest that online and offline teams each have their own advantages and disadvantages. FTF teams are best at operating in a "convergent" mode to assess options and arguments before coming to a consensus on a decision, particularly when problems are ill defined or complex (Kiesler & Sproull, 1992). Online teams are better at "divergent" tasks such as brainstorming because of: a) Concurrency: members don't have to wait to be heard in a group; b) Editability: Members can think about, review, and edit their comments before submitting them to the group; c) Anonymity: online group participation reduces evaluative apprehension and influence by other members, giving individuals more confidence to make suggestions or argue a point (Bikson, 1996; Silver et al., 1994). However, communications online can be more biased in the sense that group discussion may focus more on supporting information that has previously been shared without continued assessment prior to reaching consensus (Hollingshead, 1996; Hightower & Sayeed, 1996, 1995). Postmes et al. (2001) found that decision quality by virtual groups can be improved by encouraging independent and critical thought as the norm among the group rather than promoting behaviors that lead to quick consensus. When emergent leadership among an online collaborative is desired, the equalizing effect of virtual collaboration may require specific assignments by moderators, or the clear establishment of subcommittee structures to deal with complex issues (Wainfan & Davis, 2004).

Implications for Online Community Design, Development, and Collaboration

Based on the preceding theory and practice components of this review, we can draw some conclusions for practitioners relative to the development of online communities for collaboration. While these guidelines are based on theoretical rationale and evidence from previous studies, they will, of course, be mediated by local community circumstances and choices of technology platforms that are beyond the scope of this review.



FTF Meetings Build Community and Trust for Virtual Collaborations

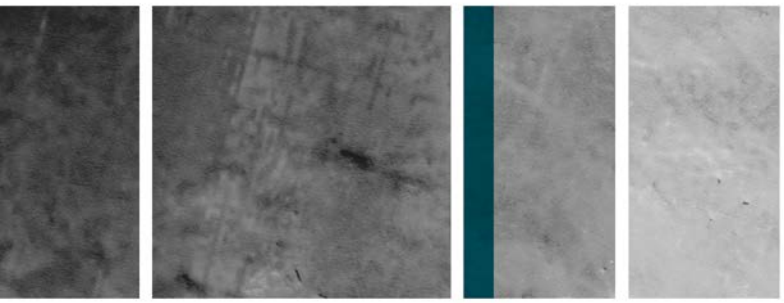
- Initial FTF meetings help build relationships and trust for better performance in virtual collaborations, even if only a core group can attend
- Trust among online community members is stronger after initial FTF meetings or when members know they will soon meet FTF
- Initial FTF meetings can provide an opportunity for collaboration in the development and implementation of online community tools
- Periodic FTF meetings among online members increase social cohesion and trust
- Discourage sub-groups meeting frequently FTF to avoid formation of factions
- Community cohesion and civic engagement in existing offline communities can be enhanced through online interactions and collaboration
- When possible, critical decisions may best be made in FTF meetings to improve outcome quality, although virtual discussion can occur beforehand
- Online teams are better at brainstorming, and can be followed by FTF decision-making

Foster Group Identity and Attachment for Online Community Development

- Periodic FTF meetings among online community members foster group identity and community attachment
- Group identity should be promoted over individual identity for virtual collaborations and online community development (depersonalization)
- Categorize members as part of a group or team
- Emphasize within-group similarities over individual differences and personalities
- Highlight group boundaries compared to outsiders
- Repeatedly promote awareness of group news and activities

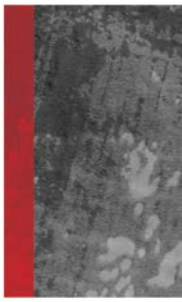
Role of the Moderator or Community Manager in Collaborative Online Communities

- Foster group identity and attachment (see points noted above)
- Facilitate on-topic conversations
- Cross-reference or summarize posted content
- Manage disputes among members
- Propagate group news that promotes group identity and awareness
- Highlight stories of members who support the group
- Emphasize common values, interests, goals, common experiences
- Arrange periodic FTF interactions among members
- Encourage critical thought over quick consensus to arrive at better decisions
- Create subcommittee structures or specific assignments to develop leadership among the group or deal with complex issues
- Have members use their real names when posting content
- Encourage newcomers to contribute once they are familiar with the community
- All members can rate content posts for relevance and quality



Online Community Development with Disadvantaged Groups

- For disadvantaged groups and remote individuals who lack Internet access or training, provide public access facilities
- Public Internet access at community centers, libraries, or other facilities can also provide training along with benefits of community building and civic engagement
- Wikis and blogs may be easiest to facilitate online community interactions



Discussion and Future Research

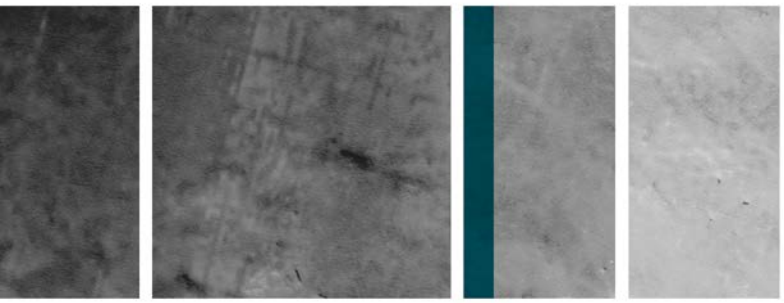
The main limitation of this review relates to both the ongoing evolution of Internet community and social media technology platforms and the rarity of consistent findings using systems-level frameworks to establish the relational benefits of collaboration in combined online/offline communities. Findings in many studies are limited in their generalizability due to small sample sizes or study demographics driven by convenience—young adult college students, for example—that may not reflect samples drawn from complex collaborations in civic engagement or business environments. With those caveats, several older literature reviews and meta-analyses referenced here have proven valuable in sorting through the work in various disciplines, from which we have reiterated major points and conclusions in the previous section.

Organizations attempting to deploy newer communications platforms such as social media, which may seem easy to implement, often do so without a clear rationale, simply assuming that these offerings will increase engagement and collaboration. A Gartner (2013) study of over 1,000 organizational collaboration initiatives found that 90 percent of them failed, primarily attributed to lack of reasons for a community to form or for potential members to be motivated to contribute to the community. We previously noted the conclusions by Murthy and Lewis (2015) that there is also no general consensus on the efficacy of social media for scientific collaboration. Social presence limitations of the newest communications media also continue to reduce nonverbal cues and gestures, but little work has been done to develop mitigation strategies.

Dispersed, remote, and other populations disadvantaged through lack of training or access to the Internet continue to be underexplored in the literature. While some rural communities have been studied as they make the transition to new communications media in support of community development (e.g., Sunderland et al., 2013) and civic engagement, the bulk of current literature overlooks this population. When these communities are developing new online collaboration efforts, they provide opportunities to study changes in social capital and social networks induced through the planning process and evolving as they interact in a new online environment (Balfour & Alter, 2016; Balfour, 2013; Mandarano, 2009; Sharp, Flora & Killacky, 2003; Sharp, 2001).

We would infer that FTF communication will continue to be the option of choice for community development and collaboration, except when such meetings are limited by distance or dispersed populations. FTF meetings can then be supported by the frequency of interaction, ease of use, and disinhibition benefits of Internet and social media tools. As we have discussed here, in using any tool for communication in collaborative efforts, the interests and motivations of the audience need to be understood and interpreted in relation to the organization's requirements for meaningful engagement and the behavioral limitations of the medium.

One of our original questions was whether there any differences in efficacy between the development of community and collaborative capacity online versus FTF engagement. Based on our review, there are advantages and disadvantages to both forms of community development and collaboration, and social science theory paired with recent empirical studies have allowed us to provide some guidelines for online community design. As the behavioral and social elements of online interactions continue to be studied in relation to theory, media effects on collaborative outcomes may uncover new capabilities for community building that will successfully integrate the benefits of both the online and offline world.



Acknowledgements

This research was conducted with financial support from the Invasive Animals Cooperative Research Centre, Community-Led Action Program, Commonwealth of Australia and University of New England (UNE), Armidale, NSW, Australia. The authors wish to thank Professor Paul Martin, Director, Australian Centre for Agriculture and Law, School of Law, University of New England for his support.

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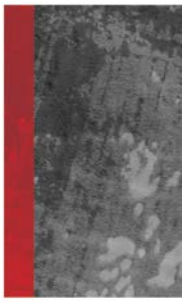

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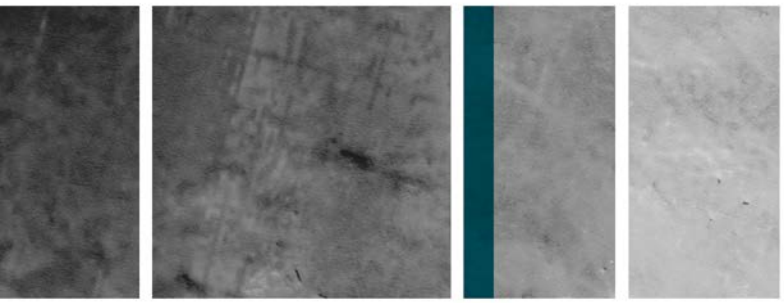

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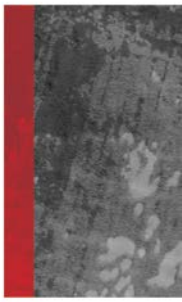

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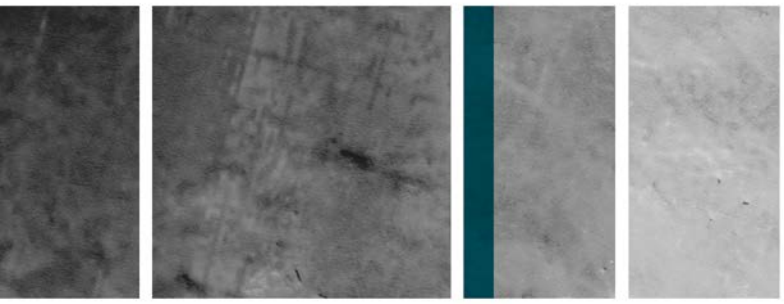

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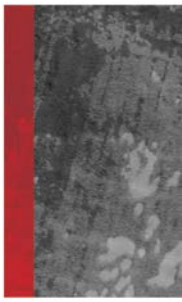

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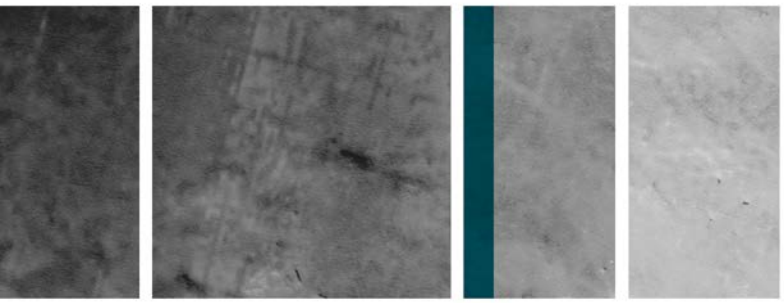

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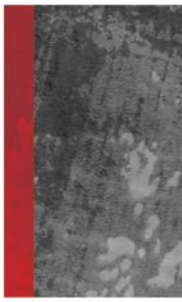

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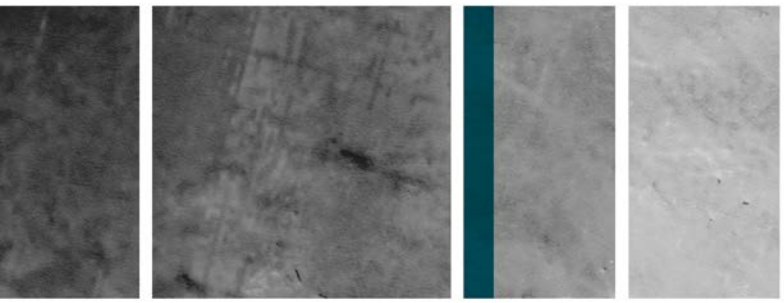

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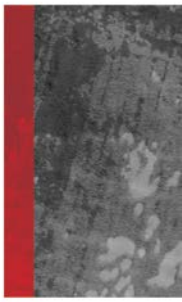

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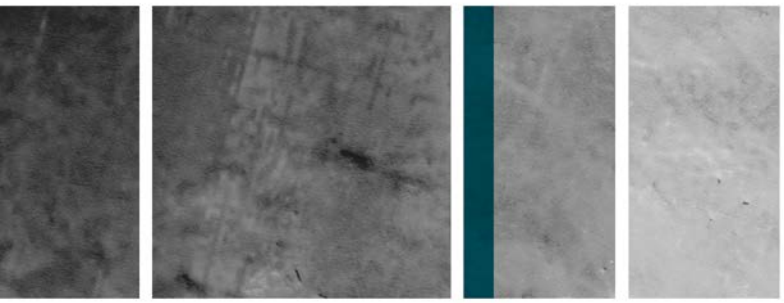

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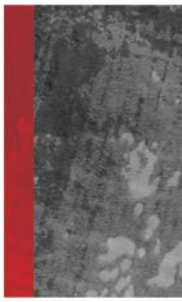

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ISBN: 978-0-6480088-1-1 (online)

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