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HOW FORMAL AND INFORMAL HIERARCHIES SHAPE CONFLICT WITHIN COOPERATIVES: A FIELD EXPERIMENT IN GHANA

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As an organizational form, cooperatives are increasingly being used throughout the world across different industries and sectors. While it has been suggested that various benefits can be derived from shared ownership, cooperatives are often characterized by conflict among members that, in turn, can lead to eventual failure of the cooperatives. Existing theory has suggested that the choice of formal control structure can play an important role in mitigating conflict, but a longstanding debate exists as to whether flat versus hierarchical control structures are more effective. To add further insight into this theoretical discussion, we conducted a field experiment involving 40 newly formed cooperatives in rural Ghana, which were randomly assigned to either a flat or hierarchical control structure. The quantitative results of our field experiment and subsequent qualitative data suggest that formal hierarchical control structures lead to lower levels of collective psychological ownership, which in turn result in higher levels of conflict compared to flat control structures within cooperatives. However, our results also suggest that the extent to which the choice of formal control structures influences conflict among cooperative members can be highly dependent on the absence or presence of an informal hierarchy.

> We don't have a chairperson, we are all chairpersons. Because we all do the work. We call the meetings. There are no quarrels. . .we are all united and [all teach] each other how to make the soap for it to be good and so we can go and sell and make money. (Member of cooperative—flat condition)

> "I'm the leader of this thing"—that normally brings disagreement because the other [person] will think you will dictate for them. . . So it normally brings confusion or conflicts. (Member of cooperative—hierarchy condition)

In recent years, interest in cooperative organizational forms has increased as a means of addressing concerns of economic inequality and poverty (Barton, 2011; Davis, 2016; Schneiberg, 2013). Because these organizational forms are typified by shared ownership and shared decision making, advocates have suggested that such organizations can distribute resources more equitably, give voice to the marginalized in decision making, and provide job

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security to the financially precarious (Cheney, Santa Cruz, Peredo, & Nazareno, 2014; Ingram & Simons, 2000). Enthusiasm for organizing new activities under the cooperative form to address social ills has grown, and the United Nations has highlighted their potential in this regard by declaring 2012 the "International Year of Cooperatives" (Boone & Özcan, 2014). Correspondingly, cooperatives have become a widely used form in poverty alleviation efforts, particularly in emerging economy contexts (Novkovic, 2008; Wanyama, 2014), and the rate at which new cooperatives are being formed has surged (Cheney et al., 2014).

However, this heightened interest in cooperative forms of organizing is actually more of a "reemergence" (Nelson, Nelson, Huybrechts, Dufays, O'Shea, & Trasciani, 2016). Research has suggested that the use of cooperatives to organize economic activity has tended to come in waves throughout history (Boone & Özcan, 2014; Cruz, Aquino Alves, & Delbridge, 2017;). One of the primary reasons for this ebb and flow is that the anticipated benefits of forming a cooperative often fail to materialize, and instead are replaced with high levels of internal conflict (Ashforth & Reingen, 2014; Hansmann, 1996; Olson, 1968). The initial enthusiasm that gives rise to cooperatives as an organizational form is thus not sustained. Conflict stems from the process of collective decision making, in which members often have heterogeneous opinions regarding appropriate action (Aldrich & Stern, 1983). Conflict also occurs when members fail to contribute equally (Ben-Ner & Ellman, 2013) and accusations of freeriding ensue (Kaya & Vereshchagina, 2014). The resulting high levels of conflict not only lead to an inability for cooperatives to grow, but also their eventual failure and decreased attractiveness as an organizational form (Boone & Özcan, 2016; Rothschild-Whitt, 1979).

A number of scholars have more recently suggested that cooperatives should consider adopting a more formal hierarchical decision-making structure to help reduce conflict (Cheney et al., 2014; Somerville, 2007). Formal hierarchy refers to explicitly established layers of authority that create a vertical differentiation of power (Anicich, Fast, Halevy, & Galinsky, 2015; Bunderson, van der Vegt, Cantimur, & Rink, 2016). While cooperative members would continue to exercise ultimate control over the organization through their shared ownership, the appointment of certain members to higher positions of authority in dealing with day-to-day issues may be necessary to address the recurring problem of conflict (Ben-Ner & Ellman, 2013; Kaya & Vereshchagina, 2014). While replacing the typical "flat" control structure that has historically predominated cooperative organizing with a more "hierarchical" control structure would represent a dramatic shift from a philosophical standpoint (Barron, 1995; Greenwood & Suddaby, 2006; Rothschild & Whitt, 1986; Simons & Ingram, 1997), scholars have argued that it may be a necessary modification to sustain future interest within the cooperative form.

We address this tension—regarding whether hierarchy is helpful or harmful in mitigating conflict—in the context of cooperatives in rural Ghana. We hypothesize that, when organizing economic activities using a cooperative form, formal hierarchy will exacerbate, rather than mitigate, conflict. Specifically, we hypothesize that the pairing of equal *ownership* with unequal *control* can cause members to mentally shift from a collectivistic to an individualistic orientation around who has responsibility for the cooperative organization—that is, a decline in their sense of collective psychological ownership (CPO). This individualistic mindset can lead to increased conflict because it creates confusion around expectations of the appropriate level of effort, the roles and responsibilities of each cooperative member, and norms for dispute resolution.

Importantly, our unique contextual setting is one in which informal hierarchy—the unofficial or less codified ranking of individuals within a social system (Diefenbach & Sillince, 2011; Jung, Vissa, & Pich, 2017; O'Mahoney & Ferraro, 2007)—is salient and relevant to routine social interactions and expectations. This allowed us to further hypothesize the important moderating role of informal hierarchy—which, in the Ghanaian context, often manifests through age-based authority—on the relationship between formal hierarchy and conflict. Research has noted that formal and informal hierarchies often coexist within a given context, and may interact in substitutive ways (Barnard, 1938; Batjargal, Hitt, Tsui, Arregle, Webb, & Miller, 2013; Bunderson et al., 2016; Diefenbach & Sillince, 2011). We argue that the extent to which formal hierarchy will result in greater conflict depends on whether a strong informal hierarchy exists within the cooperative. When a strong informal hierarchy does exist, the extent to which the use of formal hierarchy within a cooperative leads to conflict will be diminished, as a strong informal hierarchy embedded in culture and social norms provides the authority to clarify any potential role confusion. In addition, while a formal hierarchy may still be expected to lower CPO, we

suggest that the likelihood that such a decrease will heighten conflict is reduced significantly within cooperatives when a strong informal hierarchy already exists.

To test our hypotheses, we undertook a field experiment in which we partnered with a development organization during the formation of 40 new cooperative groups in a largely rural, agriculture-based region of Ghana that exhibits high levels of poverty. The goal of this organization is to assist impoverished individuals to diversify their economic activities from individual subsistence farming to cooperative enterprises. The cooperative groups they help to form are small (typically around 20 members), primarily female, and normally support simple income-generating tasks, such as soap making or basket weaving. Initial qualitative data suggested to us that many of the cooperatives formed in an earlier project were experiencing significant levels of conflict among members. Therefore, we designed an intervention whereby approximately half of the newly formed groups were randomly assigned to be formally organized using a hierarchical control structure, and the other half were assigned to a flat control structure. Following completion of the field experiment and associated quantitative data collection, we collected subsequent qualitative data to gain a deeper understanding of our hypothesized relationships. Collectively, our results support our hypotheses and suggest that formal hierarchy can increase conflict within cooperatives, although this effect depends on the strength of the group's informal hierarchy.

Our research makes several contributions to existing theory. First, we provide insight into the ongoing debate between the use of flat versus hierarchical control structures within the cooperative literature (Ben-Ner & Ellman, 2013; Núñez-Nickel & Moyano-Fuentes, 2004; Rothschild, 2016; Somerville, 2007). More specifically, we identify how CPO serves as an important mechanism to explain how formal hierarchy can increase, rather than decrease, levels of conflict among cooperative members. Second, we contribute to the broader debate within the organizational literature regarding whether formal hierarchy serves to reduce or amplify conflict. By focusing on a nontraditional organizational form, we build on prior research that has focused on potential "misfits" at the individual level (i.e., power and status) to another "misfit" at the organizational level—that of certain ownership structures. Third, following others' recommendations (Clough, Fang, Vissa, & Wu, 2019), we identify informal hierarchy as an important contingency in the relationship between formal hierarchy and group conflict. While recent research has suggested such interactions are important, they have been theorized as largely substitutive; the more one is present, the less likely it is that the other will be present (Diefenbach & Sillince, 2011). We extend such thinking by exploring how the subsequent influence of informal and formal hierarchy on behavior may differ significantly when they coexist.

LITERATURE REVIEW

Cooperatives as an Organizational Form

Definitions of cooperatives vary in their adherence to principles of shared decision making, but generally all adhere to the common principle of shared ownership (Ingram & Simons, 2000). We define cooperatives as a form of organizing where members have "control over the use and benefits of their own labor power by establishing collective title to the means of production" (Aldrich & Stern, 1983: 373). Cooperative forms share the same general functions as traditional organizational forms, including task division, task allocation, reward provision, monitoring, and coordination (Puranam, Alexy, & Reitzig, 2014). However, unlike cooperatives, traditional firms delineate a clear separation between owner and worker, and, as a result, commonly experience principal–agent problems, where the interests of the principal (owner) and agent (employees) diverge (Fama, 1980; Jensen & Meckling, 1976). Conversely, in the case of cooperative forms, principal–agent problems are diminished as owners are also workers, but issues of freeriding and coordination may arise since mechanisms for monitoring and sanctioning are less developed than in traditional organizations (Kaya & Vereshchagina, 2014; Olson, 1965, 1968).

Recently, cooperatives have garnered significant attention as a potential tool that can address myriad development outcomes. The International Labor Organization has reported that 100 million people are employed by cooperatives worldwide, and the livelihoods of nearly half of the world's population are secured by cooperatives when considering individuals who sell to cooperatives or sell cooperatives' products (Wanyama, 2014). Often located in regions that are underserved by traditional organizational forms due to the limited potential rate of return, cooperatives address state and market failures by mobilizing and empowering individuals within impoverished settings and converting their individual-level risks into

collective risks (Majee & Hoyt, 2011; Spear, 2000). Moreover, cooperatives provide an advantage to impoverished settings by prioritizing community outcomes (e.g., job stability, development of community infrastructure, social inclusion) over short-term gains (Novkovic, 2006). Not surprisingly then, cooperatives are utilized across various sectors to address development-oriented needs, including poverty reduction, gender equality, education, health, access to water and sanitation, and environmental sustainability (Wanyama, 2014).

More generally, prior studies have alluded to many benefits of the cooperative as an organizational form. For example, research has suggested that cooperative ownership increases empowerment (Quandt, Ferraresi, Kudlawicz, Martins, & Machado, 2017), worker participation (Rhodes & Steers, 1981), motivation (Hackman & Oldham, 1975; Rothschild & Whitt, 1986), job satisfaction (Hochner, 1978; Klein, 1987), and general productivity (Sauser, 2009; Wagner & Rosen, 1985). As a result, alternative organizational forms such as cooperatives are on the rise, gaining both in number and in variation (Diefenbach & Sillince, 2011; Schneiberg, 2013).

While the current surge in interest in this organizational form is relatively recent, cooperative organizing has featured prominently throughout history (Coleman, 1970, 1974, 1993; O'Mahoney & Ferraro, 2007). However, scholars have also documented the decline of the form's popularity, as many cooperatives fail to deliver on their promise, due to "degeneration." According to the degeneration thesis, cooperative failure can occur either economically, whereby a cooperative maintains its cooperative ideals but suffers financially; or socially, where it succeeds financially but loses its cooperative spirit (Storey, Basterretxea, & Salaman, 2014; Webb & Webb, 1920).

Cooperative forms seem especially susceptible to high levels of conflict (Ashforth & Reingen, 2014; Rothschild & Whitt, 1979; Somerville, 2007). Heightened potential for conflict is not surprising, given that "collective goods production depends on group members' compliance with behavior that achieves the group's collective goals" (Anthony, 2005: 496). To achieve the collective goals, group members need to contribute adequate levels of effort, and when these contributions wane, questions of who will monitor and sanction the monitor—when all members are equally considered to be legitimate monitors—arise (Klein, Crawford, & Alchian, 1978), and conflict can ensue (Ben-Ner & Ellman, 2013; Kaya & Vereshchagina, 2014). Finally, given that cooperative forms are typically motivated by social considerations but must also be economically solvent to survive, tensions often arise as a result of this hybridity and the inability to reach consensus (Ashforth & Reingen, 2014; Ometto, Gegenhuber, Winter, & Greenwood, 2018).

Formal hierarchy is one tool for bureaucratic control that is designed to help reduce conflict within organizations (Magee & Galinsky, 2008). Recently, scholars have begun to question whether the idealized flat control structure common among many cooperative forms may in fact be a driver of conflict and detrimental to the goals and survival of cooperatives (Ben-Ner & Ellman, 2013; Kaya & Vereshchagina, 2014). A formal hierarchy is not necessarily at odds with the principles of shared decision making, as cooperative members can still retain control over important decisions—indeed, this is a key distinction between cooperatives and corporations—but can simultaneously delegate day-to-day decision making. This delegation can in turn help avoid freeriding by clarifying roles and avoiding conflict.

However, many scholars of cooperatives have suggested that formal hierarchy is antithetical to the basic premise of cooperative organizing (Barron, 1995; Rothschild & Whitt, 1986; Simons & Ingram, 1997). As a result, these scholars have advocated for a relative absence of formal hierarchical control structures in cooperatives, which we herein refer to as a flat formal control structure (Greenwood & Suddaby, 2006; Simons & Ingram, 1997). Moreover, cooperatives have been idealized as using "softer" approaches to quell potential conflicts and promote coordination based on psychological mechanisms such as trust and reciprocity, versus the typical "hard" approaches for mitigating conflict taken within shareholder-owned corporations, such as autocracy or the threat of dismissal (Adler, 2001; Pierce, Kostova, & Dirks, 1991). Therefore, empirical questions remain as to whether hierarchy facilitates or detracts from cooperative functioning, particularly in regards to conflict mitigation.

Hierarchy and Conflict

Hierarchy has been defined as "an implicit or explicit rank order of individuals or groups with respect to a valued social dimension" (Magee & Galinsky, 2008: 354). Formal hierarchy—the "explicit" rank order of individuals—delineates the extent to which an organization is characterized by a vertical division of labor, such as between supervisors and subordinates (Bunderson & Boumgarden,

2010). Formal hierarchy also seeks to decompose organizations into specialized tasks that can be more easily managed, via the defining of roles, responsibilities, and reporting relationships (James & Jones, 1976) and the establishing of decision-making authority (Bunderson et al., 2016).

A great deal of extant research has argued that the use of formal hierarchy in traditional organizations improves performance—for example, by motivating individuals through hierarchy-related incentives (Blau, 1964; Frank, 1985), supporting division of labor through clearly established leadership (Magee & Galinski, 2008), and inducing a range of psychological benefits, such as need for achievement and a sense of belongingness (Gruenfeld & Tiedens, 2010; Halevy, Chou, Galinsky, & Murnighan, 2011b). Barnard (1938) also suggested that hierarchy's authority derives from lower-ranked members—that is, power is provided *by* those lower in the hierarchy *to* those at higher levels, as lower-ranked members determine that the consequences of insubordination do not outweigh the benefits, thus granting those at higher levels the authority to issue directives (see also Mouzelis, 1967; Simon, 1947).

Most relevant to our study, formal hierarchy has also been argued to reduce conflict and encourage cooperation (Halevy, Chou, & Galinsky, 2011a). Formal hierarchy can clarify division of labor and patterns of deference, which reduce conflict (Ronay, Greenaway, Anicich, & Galinsky, 2012), particularly when the tasks undertaken by the group are complex or interdependent (Halevy et al., 2011b; Ronay et al., 2012). Conversely, in the absence of a formal hierarchy (a flat control structure), social order is called into question and status disagreements can arise, redirecting group members' efforts toward status contestation and conflict (Bendersky & Hays, 2012). Finally, by reducing ambiguity with regard to roles and responsibilities, hierarchy improves task coordination, and, as a result, the likelihood or severity of conflict is reduced because procedures are in place to address such circumstances (Bunderson & Boumgarden, 2010).

In contrast, other scholars have highlighted the various pitfalls of formal hierarchy with respect to conflict. Formal hierarchy has been noted to increase conflict and decrease coordination by causing disagreements over how tasks are completed (Bunderson et al., 2016), and contests over rank order (Greer & Van Kleef, 2010; Magee & Galinski, 2008). On the other hand, flat structures have been argued to enable a greater diversity of viewpoints to be considered from across an organization or group, which can lead to perceptions of fairness (Greenberg, 1987; Lind, Kanfer, & Earley, 1990) and support more cooperative (and less conflict-based) behaviors (Thibaut & Walker, 1975). In addition, by providing organizational members with greater responsibility, flat structures may allow subordinates to become less dependent upon superiors (Argyris, 1957), more task skilled (Darley & Gross, 1983), and more likely to contribute to decision-making processes (Locke & Anderson, 2015). Flat structures can still allow for the distribution of roles and responsibilities, but do so in a horizontal rather than vertical fashion (Hinds & Kiesler, 1995).

Recent research has also cautioned against considering the effects of formal hierarchy in an "organizational vacuum" (Batjargal et al., 2013; Diefenbach & Sillince, 2011). Given that hierarchy can be both formal and informal, it is important to consider their *collective* impact when theorizing associated outcomes—a charge that extant research has largely ignored (Clough et al., 2019; Magee & Galinsky, 2008). Informal hierarchy has been defined as the "unofficial stratification among members of a social system. . .which emerge[s] from social interaction and become[s] persistent over time through repeated social processes" (Diefenbach & Sillince, 2011: 1518–1519). Informal hierarchy is the "implicit" rather than "explicit" rank order of individuals within an organization or group. Such structures are particularly prevalent in contexts rich in cultural traditions (Mair, Marti, & Ventresca, 2012). Informal hierarchy exists everywhere, and often arises spontaneously (Anderson, John, Keltner, & Kring, 2001; Barnard, 1938)—for example, as individuals make judgments of others' competence or power (Magee & Galinsky, 2008; Todorov, Mandisodza, Goren, & Hall, 2005).

Both formal and informal hierarchies are institutions, or social constructions, that provide prescriptions for appropriate behavior within a given context (Ostrom, 2010). Furthermore, individuals and organizations are often influenced by multiple institutional forces that can be either congruent or incongruent in their prescriptions (Batjargal et al., 2013; Greenwood, Raynard, Kodeih, Micelotta, & Lounsbury, 2011). In contexts where institutional forces are congruent (i.e., formal and informal hierarchy are aligned), individuals are provided with clear and uncontested guidance for appropriate action. However, when institutional forces are incongruent, the confluence of varying prescriptions introduces potential complexity and confusion regarding how to behave (Hitt, Ahlstrom, Dacin, Levitas, & Svobodina, 2004; Pache & Santos, 2010).

HYPOTHESES

The Effects of Formal Hierarchy on Conflict

Recently, scholars have suggested that cooperatives may benefit from adopting a more hierarchical decision-making structure (as opposed to a shared decision-making structure) to help mitigate the recurrent problem of conflict among members (Cheney et al., 2014; Somerville, 2007). However, we argue that using a formal hierarchy within a cooperative form may actually serve to exacerbate conflict among group members. Specifically, we theorize that the pairing of an "equal" *ownership* structure with an "unequal" *control* structure will create confusion among members and ultimately increase levels of conflict.

In having an equal ownership stake within a cooperative, members are likely to perceive their initial status as equal to that of other members (Boone & Özcan, 2014). However, when formal hierarchy is used to differentiate decision-making rights unequally among members, this is likely to cause confusion regarding status and why certain individuals are conferred higher status. Such confusion might involve questions about the division of tasks to be undertaken by each member. While the scope of tasks prescribed under cooperative ownership is often shared and overlapping (Carzo & Yanouzas, 1969), formal hierarchy makes use of vertical differentiation— separating those who "do" from a select few who "manage." Combining an equal *ownership* structure with an unequal *control* structure might also result in greater confusion surrounding the appropriate mechanisms for resolving disputes (i.e., consensus building vs. fiat). As a result, formal hierarchy can result in greater ambiguity rather than in the clarity that it is intended to provide (Bunderson & Boumgarden, 2010, Ronay et al., 2012). Comparatively, the use of a flat control structure sends a clearer and more consistent message to cooperative members. While shared decision-making processes can require greater time and effort, their alignment with the underlying principles of equal ownership are less likely to result in confusion regarding roles and responsibilities among members, and reduce conflict by maintaining a shared perception of equality among cooperative members. Based on these considerations, we hypothesize that:

Hypothesis 1a. A formal hierarchical control structure will result in higher levels of conflict in cooperative organizations, as compared to a flat control structure.

We anticipate that an important explanatory mechanism linking control structure to conflict within cooperatives will be CPO. One of the unique attributes of the cooperative form is an alignment between principal and agent that is intended to generate a sense of shared ownership in the minds of its members (Rothschild & Whitt, 1986). Core to the human condition, psychological ownership refers to feelings of ownership of material or immaterial objects (Pierce et al., 2001). Psychological ownership can form around various objects, including an individual's job (Peters & Austin, 1985), organizational practices and issues (Kostova, 1998; Pratt & Dutton, 2000), and organizations themselves (Dirks, Cummings, & Pierce, 1996). More recently, scholars have suggested that a sense of psychological ownership can also exist at the group level (Pierce, Kostova, & Dirks, 2003; Rantanen & Jussila, 2011). Whereas an individual's psychological ownership manifests in the idea that "this is mine," *collective* psychological ownership occurs when individuals within a group share the feeling that the target of ownership is "ours" (Pierce & Jussila, 2009), which in turn determines guidelines for action around those objects (Rantanen & Jussila, 2011).

As discussed above, the introduction of formal hierarchy into a cooperative organization is likely to cause increased confusion regarding the status, roles, and responsibilities of each member. When members are instructed to perceive themselves as equal to other members in ownership, the introduction of an unequal control structure can then cause members to begin to question how their particular status, role, and responsibilities differ from those of other members. This focus on "differences" rather than "similarities" causes them to perceive actions as producing individual, rather than collective, benefit (Pierce & Jussila, 2009). This creates a cognitive "shift" away from a collectivistic frame ("we") to more of an individualistic frame ("me") as group members are assigned specific hierarchical roles, compete for resources to perform their specified tasks, and are rewarded or punished for their own performance by other individuals in their group with whom they are supposed to be equals (Pierce & Jussila, 2009). That is, the introduction of a formal hierarchical structure can erode CPO among cooperative group members. Comparatively, the pairing of a flat control structure and a cooperative ownership structure is more likely to engender stronger CPO among group members (Brown, Pierce, & Crossley, 2014; Pierce, Jussila, & Cummings, 2009), as the collectivist "we" frame is continuously reinforced when members both work and make decisions collectively. While still creating some division

of labor among cooperative members to complete specific tasks (Courpasson, 2000; Hales, 2002), such differentiation within flat control structures is based upon the notion of equal, rather than unequal, power.

High levels of psychological ownership—at both the individual and the collective level—have subsequently been shown to lead to increased comfort, security, and commitment on the part of organizational members to the goals and outcomes of the larger entity (Van Dyne & Pierce, 2004). In addition, feelings of ownership manifest through greater investments in time and energy toward an entity's goals (Pierce et al., 2001), and trigger citizenship behaviors such as helping coworkers and volunteering for special tasks (Van Dyne & Pierce, 2004). In contrast, a decrease in CPO can negatively influence motivational responses at the individual level, and cooperative behaviors at the group level (Pierce et al., 1991), each of which can undergird conflict. Specifically, members may feel less responsibility for outcomes (Hackman & Oldham, 1975), be less motivated to engage in group activities with "zeal and careful working" (Webb, 1912: 138), and be less likely to act more cooperatively toward achieving common goals (Sieger, Zellweger, & Aquino, 2013) in mutually supportive ways (Pierce & Jussila, 2009). Hence, we expect that the decrease in CPO resulting from the use of formal hierarchy within cooperative organizations will lead to an increase in conflict among organizational members. Based on these considerations, we hypothesize that:

Hypothesis 1b. Collective psychological ownership will mediate the relationship between formal control structure and conflict in cooperative organizations. More specifically, a hierarchical control structure, as compared to a flat control structure, will lead to lower levels of CPO, which will, in turn, result in higher levels of conflict.

The Moderating Effect of Informal Hierarchy

While we expect that, on average, *formal* hierarchy will result in higher levels of conflict as compared to flat structures within cooperatives, we hypothesize that this effect will be attenuated by the presence of an *informal* hierarchy. Prior work has cautioned against examining the effects of formal hierarchy without understanding power dynamics nested within the broader institutional environment (Bunderson et al., 2016; Diefenbach & Sillince, 2011). Indeed, economic activity takes place within a larger set of institutional spheres (e.g., ethnicity, family, religion), and many of these institutional spheres stratify society in informal or less codified ways. Therefore, we expect that the presence of a strong informal hierarchy can serve to reduce the confusion surrounding roles and responsibilities that arises from the combining of a formal hierarchy in a cooperative ownership structure, thereby diminishing the extent to which formal hierarchy leads to conflict.

While formal hierarchy may assign explicit roles and reporting structures to members of an organization (Blau & Scott, 1962), there are often preexisting sources of informal hierarchy among members that prescribe more implicit, yet potent, distinctions in power and status (He & Huang, 2011; Jung et al., 2017; Lubatkin, Lane, Collin, & Very, 2006; Magee & Galinsky, 2008). A plethora of characteristics, such as age, gender, ethnicity, and competence, can shape informal power differences among members of an organization (Anicich et al., 2015; Berger & Zelditch, 1998; Tarakci, Greer, & Groenen, 2016).[1] Such informal hierarchies are often an "unavoidable reality of group life" (Bunderson et al., 2016: 1265). Formal hierarchy, informal hierarchy, and cooperative ownership structures are, at their very core, institutions, which can—and often do—come with competing prescriptions for how organizational actors should behave (Webb, Tihanyi, Ireland, & Sirmon, 2009). Prior work has suggested that while individuals and organizations may be subject to competing institutional forces, such forces do not necessarily have equal influence on subsequent behavior (Batjargal et al., 2013; Greenwood et al., 2011).

We argue that when informal hierarchy is deeply embedded in the culture and social norms of a community, the informal hierarchy is an extremely powerful and persistent institution that can override prescriptions (whether consistent or conflicting) from other institutions through informal mechanisms such as deference and persuasion (Kingston & Caballero, 2009; North, 1990; Williamson, 2000). More specifically, we suggest that when strong informal hierarchies exist within a cooperative, the presence of high-powered members ensures that clarity of roles and responsibilities is maintained,

[1] Within the particular context of our study (Ghana), age is considered one of the most pertinent characteristics that defines authority and status. As a result, cooperative groups in which there is large age heterogeneity (both older and younger women) represent a strong informal hierarchy.

even when confusion between ownership and control structure arises. When disagreements surface from the use of a formal hierarchy in a cooperative ownership structure, an informal hierarchy can help in mitigating potential conflict by clarifying a path forward.

This implies that while both formal and informal hierarchy represent a form of unequal control that is in contrast to the signals of equality from the cooperative organizational form, individuals respond differently to these two different types of hierarchy. Whereas the prescriptions of formal hierarchy are contained within the confines of the cooperative, the authority of members of an informal hierarchy stems from broader institutional prescriptions. Subordinate members often look to these powerful members for guidance, and evaluate their directions as appropriate (Magee & Galinsky, 2008). Because informal hierarchy relies on preestablished and commonly accepted authority, the guidance of powerful members can help to address conflict by leveraging practices and behaviors that are deemed legitimate (Ridgeway, Johnson, & Diekema, 1994). Therefore, members are likely to be more satisfied with resolutions suggested by those with high informal power and, in turn, experience less tension and conflict within the cooperative.

Moreover, it is likely that when cooperatives are initially formed around assumptions of equality, the presence (or absence) of an informal hierarchy may serve to temper initial expectations about whether (or not) a cooperative's intended equality will match reality. More specifically, the presence of higher-status individuals in the hierarchy can engender confidence (or perceived legitimacy) among other members in the cooperative-related activities (Pollock & Rindova, 2003). This shift in expectations about whether the cooperative's intended equality will match reality is likely to happen even before a formal control structure is established (Marquis, 2003), and might result in less confusion if a formal hierarchy is established, since the expectations of equality were already attenuated by the presence of members of an informal hierarchy. In contrast, in cooperatives characterized by an absence of informal hierarchy, initial perceptions of equality are believed, setting the stage for confusion when a formal hierarchy is introduced. In such cooperatives that feature an absence of informal hierarchy, members lack a broader system to leverage in resolving conflicts, and the pairing of the hierarchical control structure with the cooperative form will increase conflict. Conversely, within cooperatives characterized by an absence of informal hierarchy, the use of a flat control structure provides a shared decision-making process that can resolve conflicts as they surface (per Hypothesis 1a). Accordingly, we hypothesize:

> *Hypothesis 2a. The presence of an informal hierarchy will moderate the relationship between formal control structure and conflict. More specifically, the presence of an informal hierarchy will diminish the extent to which a hierarchical control structure will result in higher levels of conflict, as compared to a flat control structure, in cooperative organizations.*

We proposed in Hypothesis 1b that the introduction of a formal hierarchy into a cooperative form may lead to lower levels of CPO, which in turn could increase conflict. In contrast, we expect that flatter control structures can enhance CPO by inducing a collective sense of responsibility, which subsequently reduces conflict. We anticipate, however, that the role of CPO in explaining the link between control structure and conflict in cooperatives is dependent on the presence or absence of an informal hierarchy. In the absence of an informal hierarchy, CPO pushes members to feel more responsible and to work cooperatively toward their shared goals, thereby reducing the potential for conflict. In the presence of an informal hierarchy, the role of CPO in reducing conflict is attenuated.

As described above, informal hierarchy is deeply rooted in codes of conduct and norms that exert control over individual behavior (Kingston & Caballero, 2009; North, 1990; Williamson, 2000). The strength of this influence arises from the presence of power and status among some cooperative members, which guides the behavior of subordinate actors. As such, when an informal hierarchy is present in a cooperative with a formal hierarchy, the link between the resulting low levels of CPO (as a shared psychological state) and conflict (as a behavior) becomes much less relevant. In such instances, even cooperative members with low levels of CPO are likely to adhere to informal conflict-avoidance mechanisms and engage in less conflict. This may be due to coercion, or to a belief that members of the informal hierarchy are best equipped to provide guidance on such matters (Peiro & Melia, 2003). Adherence to such informal mechanisms, and the collective community norms in which they are embedded, is likely deemed appropriate by even those cooperative members who have shifted to a more "individualistic orientation." This is because prescriptions for their resulting behavior contained *within* the specific context of the cooperative are less relevant as compared to broader societal prescriptions originating from *outside* the boundaries of the

cooperative (i.e., given that members are embedded in everyday roles outside the cooperatives that are characterized by broader incentives and penalties [White, Boorman, & Breiger, 1976]). Similarly, while a flat control structure has the potential to facilitate the emergence of CPO, the presence of a strong informal hierarchy can lead cooperative members to turn to powerful individuals for direction on key decisions, thereby reducing the need for CPO to mitigate conflict. In summary, the presence of an informal hierarchy may overshadow the need for CPO, and its role in mediating the relationship between formal control structure and conflict. Therefore, we hypothesize:

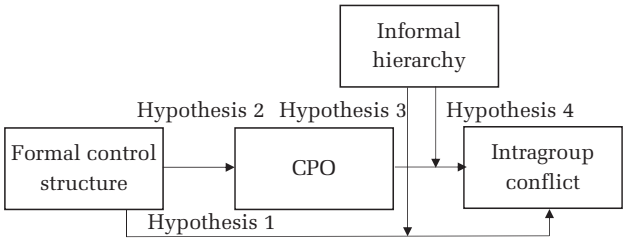
Hypothesis 2b. The presence of an informal hierarchy will moderate the extent to which CPO mediates the relationship between formal control structure and conflict in cooperative organizations. More specifically, the extent to which a decrease in CPO will result in higher levels of conflict in cooperative organizations with a hierarchical control structure will depend on the presence or absence of an informal hierarchy.

FIELD EXPERIMENT METHODOLOGY

Experimental Design and Sample

The setting for our study was the rural northern region of Ghana. Most rural areas of Ghana, particularly in the north, have poverty rates of up to three times the national average (Kasalu-Coffin, Larbi, Kapiamba, & Nakayama, 2016), and development efforts comprise a significant portion of the local economy (Porter & Lyon, 2006). Subsistence farming predominates, and many development organizations undertake interventions focused on attempting to diversify to other sources of income. These development interventions are often structured through cooperative-venture creation, as opposed to individual support, and consequently we felt that Ghana was an appropriate setting for a study of cooperative development.

FIGURE 1
Summary of Hypotheses



Ghana appeared particularly well suited given our interest in informal hierarchy (Slade Shantz, Kistruck, & Zietsma, 2018). The Ghanaian culture is considered to be a highly hierarchical society (Hofstede, 2001; Schwartz, 2006). Elders carry positions of authority, are given preferential treatment by their communities and deference by youth, and often carry the responsibility of decision makers or spokespersons for groups (Van der Geest, 1997). The Ghanaian culture is also highly collectivistic, with an emphasis on cooperation and communal relationships (Hofstede, 2001; Schwartz, 2006). In collectivist cultures, individuals view themselves as embedded in an interdependent web of social structures, including immediate and extended family, community, and tribe (Schwartz, 2006). Multifamily compounds are the norm, and in such arrangements individuals are expected to share their labors, as well as the fruits of those labors (Hanson, 2005), particularly if one member is more affluent than another (Marbell, 2014).

To conduct our study, we collaborated with a development organization, BetterLife (a pseudonym). This organization's mission is to address the persistent cycle of poverty by enhancing the livelihood of rural communities across developing economies in Africa, the Americas, and Asia. To execute its mission in Ghana, BetterLife helps communities in the design, implementation, and monitoring of income-generating groups (IGGs). These groups, or cooperatives, collectively own and manage cooperative microenterprises with the purpose of increasing and diversifying their income. The groups in our sample were exclusively involved in the production of shea butter, soap, or baskets. They receive shared assets (e.g., raw materials, equipment) from BetterLife to support the production, selling, and management of these income-generating activities, and production inputs and earnings are shared across members. Ultimately, the goal for these groups is to attain independence by selling products while reinvesting their earnings into growth opportunities. Growth in earnings, in turn, can contribute to the economic and overall welfare of cooperative members and enables them to diversify their income sources. Since most locals depend on farming, having this additional source of income is important to increase cash flow during preharvest periods, also known as the "hungry months."

We worked with a field team based in the northern Ghanaian city of Tamale and in the upper east rural areas of Ghana (around the town of Bolgatanga), an area with a relatively long history of development organization interventions (Porter & Lyon, 2006).

At the beginning of our study, BetterLife was implementing and supporting IGGs in other areas of Ghana, and managers discussed with us that an important challenge for these programs is the conflict that can surface within these cooperatives and consequently undermine members' willingness to commit long term to cooperative activities. In addition, they indicated that continued participation in these IGGs is sometimes inhibited by disagreements between group members. At this point, we sought to gain a deeper understanding of these types of group dynamics and their possible effect on cooperative outcomes.

As an initial investigation, two members of our team visited the region of interest in Ghana and, with the help of BetterLife's local field officers and community translators, interviewed a number of individuals. These individuals were BetterLife beneficiaries but were not members of the groups that eventually formed our sample. These interviews were informal, and were conducted both individually and in focus groups. These interviews, coupled with observation of several group meetings and local market-based activities, provided us with an understanding of the local culture, the development organization's programming approach, the interactions between community members and the organization, and the existing dynamics among these groups. The interviews allowed us to gain a sense of the challenges that these communities face when working in groups, and how the long-term viability of these cooperatives may be affected by intragroup conflict among cooperative members. The interviews also helped us to understand how conflict seemed to increase when individuals shifted their focus from collective to individual benefit, as individuals began to think more about their own short-term inputs and gain, rather than the long-term sustainability of the cooperative.

After these community visits and follow-up discussions with BetterLife managers, we designed a field experiment to test the relative effectiveness of a hierarchical, versus a flat, formal control structure in the upper east region of Ghana. More specifically, we wanted to assess the effectiveness of these distinct control structures on cooperative outcomes, such as CPO, which we anticipated would be affected based on our hypothesized misfit between ownership and control structure, as well as intragroup conflict, our dependent variable of interest. Additionally, given that these cooperatives are formed in settings historically characterized by informal institutions, we sought to examine how key aspects underpinning the informal hierarchy could moderate the influence of the imposed formal hierarchy.

To do so, we modified the existing training of 45 newly formed IGGs, randomly assigning each group to a formal hierarchy (23 groups) or flat (22 groups) condition. These groups were almost entirely comprised of women, with the exception of three groups that had one male member. To ensure our randomization assignment worked effectively, we conducted a series of *post hoc* tests. These tests assured us that there were no statistically significant differences between the groups in the hierarchy and the flat condition with regards to the size of the group ($t = .38$, $p = .71$), the number of individuals who left the group ($t = .78$, $p = .44$), the income-generating activity of the group (i.e., soap, shea butter, or basket production; Pearson $\chi^2 = 2.94$, $p = .23$), and the presence of a male in the group (Pearson $\chi^2 = .62$, $p = .43$).

During the study, we encountered data reliability issues for two of the groups in the flat structure. We also learned that a small number of groups were experiencing high member migration to outside of the community, and overall high exit rates due to seasonal work issues (two groups in the flat condition, one group in the hierarchy condition). Collectively, these issues led to the exclusion of five groups from our analysis. Our final sample of 40 groups consisted of 22 in the hierarchy condition and 18 in the flat condition, with an average size of 19.3 members.

Intervention Procedure and Data Collection

Our intervention consisted of adjusting one module within the existing training program that each coop received, and then conducting a "train the trainer" session with the field officers who would be conducting the training sessions with the newly formed cooperatives. Over a one-week period in June 2015, in which we were on site working from the BetterLife offices in Tamale and Bolgatanga, we used the existing training materials as a starting point but created two distinct versions (hierarchical and flat) of each module. Both conditions involved the same set of tasks: (1) membership, (2) finance, (3) production, and (4) planning and marketing. In the hierarchy condition, the four tasks were overseen by the following executives: (1) the secretary, (2) the treasurer, (3) the organizer, and (4) the vice chairperson. These executives, in turn, all reported to the chairperson. Elections for these positions are held annually by the cooperative membership. From subsequent observation and

interviews, election results appeared to have reflected task-based requirements, rather than simply mirroring informal hierarchical positions, as might have been expected. For example, treasurers needed to be numerate, secretaries needed to be literate, and chair roles needed to have the ability to communicate with nongovernmental organization (NGO) field officers (primarily, this meant that they needed to have a cell phone and speak a common language).

In the flat condition, individuals were organized into "committees" around the same four organizational tasks. One individual per committee was randomly assigned to be the "liaison," whose job it was to act as a point of contact for communicating with other committees. It was repeatedly reinforced that the "liaison" was not responsible for coordinating group activities or overseeing group decisions, but rather to act as a mouthpiece for intercommittee communication. To ensure that any one individual did not begin to acquire status or power associated with being a "liaison," this role periodically rotated among committee members so that each individual in the committee would be a liaison at some point in the year. We also developed a control structure manual and laminated control structure poster for each condition.

Next, we pilot tested the training materials and revised them accordingly. Subsequently, we conducted a train-the-trainer session with the field officers who would be conducting the training, using role playing, scenarios, and other exercises to ensure that the field officers would train the groups based on our materials, rather than falling back into routine scripts from previous training. We also ensured that trainers were randomly assigned to the flat or hierarchy conditions. The actual training of cooperative members was implemented in September 2015, and our research coordinator was present to ensure that the manipulation was implemented consistently. The training session within our study lasted approximately half a day. Next, the income-generating assets were provided to the group by BetterLife, and the groups began producing and selling their wares. In March 2016 we returned to conduct an informal manipulation check, where we observed a number of cooperative meetings across both conditions to ensure that the cooperatives were following the control structure conditions to which they had been assigned.

In September 2016, we conducted a quantitative survey among all the cooperatives in our sample. Prior to this, we pilot tested the survey instrument with 10 individuals, across five cooperatives outside of our sample, to ensure full respondent comprehension. Once necessary changes had been made, the actual survey was conducted by eight hired enumerators, which BetterLife had contracted previously for monitoring and evaluation tasks, over approximately one week. Within each cooperative, 10 individuals (approximately half the group) completed the survey. In total, our research in Ghana comprised six separate trips to the research site between 2014 and 2017 that involved over 10 weeks on the ground for various members of the research team.

Measures

Intragroup conflict. Based on our time in the field and with the organization, we obtained a solid understanding of the triggers that led to behavioral conflict among members. To reflect these triggers, we created a four-item scale that could best capture conflict in our setting ($\alpha = .82$). This measure gauges conflict-related behavior among group members during decision-making and operational activities. The measure includes 7-point Likert scale items regarding the frequency with which "disagreements among group members" were prevalent: "at meetings," "while making or delivering products," and "about how the group's shared resources should be used"; together with the frequency with which people would "get angry while working in this group" (1 = "Never," 7 = "Always"). We used principal component analysis with orthogonal rotation to construct this scale, ensuring that all items had a single factor loading over .60. Factor scores were then used to arrive at our final measure.

Since we gathered our data from individual responses, we examined the interrater agreement and reliability indices to justify aggregation to the group level. The mean $R_{wg(j)}$ for intragroup conflict was 0.91 (James, Demaree, & Wolf, 1984), while the intraclass correlation (ICC(1)) was 0.49 ($p < .001$), and the reliability of the means (ICC(2) [Bliese, 2000]) was 0.91. Collectively, these statistics exceed the thresholds suggested by extant research (Bliese, 2000) and provide support for group-level aggregation.

Collective psychological ownership. To measure CPO, we used a 3-item scale that combines distinct attributes of this concept as established by previous studies (Avey, Avolio, Crossley, & Luthans, 2009; Pierce, Kostova, & Dirks, 2001; Van Dyne & Pierce, 2004). First, we included an item alluding to ownership or possessive behavior concerning the group

(Furby, 1978; Van Dyne & Pierce, 2004). This question asked about the frequency with which group members "behave as though they are truly owners of the group" (1 = "Never," 7 = "Always"). We also captured a "sense of responsibility" for a target (i.e., the group's outcome), which typically accompanies feelings of ownership (Furby, 1978; Van Dyne & Pierce, 2004). We asked about the frequency with which group members "behave as though they are responsible for the success of the group." In addition, because feelings of ownership are associated with the need for effectance (White, 1959), we accounted for the self-efficacy aspect of CPO (Avey et al., 2009). We asked, "How often do group members behave as though they can have a positive influence on the outcomes of the group?" To construct this scale, we used principal component analysis with orthogonal rotation and ensured that these items loaded into one factor (> .60). In addition, the reliability of this scale yielded an acceptable measure (α = .87), and we used factors scores as our final measure. Our analysis also supported aggregating this variable to the group level, as indicated by an $R_{wg(j)}$ of 0.86, an ICC(1) of 0.53 ($p < .001$), and an ICC(2) of 0.92.

Informal hierarchy. We measured the salience of informal hierarchy by examining the extent of age heterogeneity in a group. In our context, we considered an informal hierarchy to be present in groups that were more heterogeneous in age. While there are other dimensions that could characterize heterogeneity in groups (e.g., gender, ethnicity, education level), we focused on age for two reasons. First, the groups in our sample were fairly homogeneous in most dimensions. Each group comprised primarily women of a similar level of education. However, in some groups members had a high degree of variance in terms of age, while in other groups members were primarily of similar age. Further, in Ghana, age is an important and visible indicator of power and status, and the extent to which an individual is revered and respected (Van der Geest, 1997). Elders in this culture are considered superior in knowledge and carriers of great wisdom, as illustrated by popular Ghanaian proverbs such as "Unlucky the house that does not have an old person living in it" and "The mouth of an elder is stronger than a god" (Marbell, 2014). As a result, cooperative groups within Ghana whose members were all similar in age were viewed as having relatively equal status and power. In such homogeneous groups, we considered informal hierarchy to be relatively absent. Comparatively, where there was greater age heterogeneity—that is, in groups that comprised older and younger members—informal hierarchy was present.

We asked group members whether "most people in their group were around the same age" (coded as 1 = "Different ages," 0 = "Same age"). This binary variable enables us to capture perceptions about age similarities or differences between group members. Rather than using individual age data, this measure gauges the extent to which group members perceive the presence of age similarities or differences within the group and, therefore, the likelihood that such perceptions can influence power dynamics and the presence of informal hierarchy. In addition, this measure is appropriate for our context since group members often lack knowledge of their exact age and typically do not have birth certificates. Moreover, birthdays are not celebrated and many individuals lack access to calendar information. Instead, the perception of relative seniority, or lack thereof, matters most in these social relations. The aggregation of this variable to the group level was supported since the mean interrater agreement $R_{wg(j)} = 0.95$.[2]

Findings

Quantitative results. Table 1 displays summary statistics and correlations for the variables of interest, as well as for additional descriptive data. As reported here, the average group attrition, measured as the number of individuals who left their group, is 1.42. This variable is not correlated with any of the variables in our analysis, which reassures us that our results are not biased by attrition. Similarly, we find that the size of the group and the presence of a male in a group are not correlated with the analysis variables. Table 1 also shows statistically significant correlations between intragroup conflict and: formal hierarchy, CPO, and the presence of an informal hierarchy.

We began with the use of a one-way ANOVA to test Hypothesis 1a. Consistent with the premise of this hypothesis, we found that groups with formal hierarchical control structures (coded as 1) reported more conflict ($M = .17$, $SD = .70$) compared to those with flat control structures (coded as 0) ($M = -.247$, $SD = .396$), $p = .03$. Model 1 in Table 2 summarizes these results.

Hypothesis 1b suggests that the relationship between a hierarchical control structure and intragroup conflict is mediated by CPO. As shown in

[2] ICC scores were not calculated, since this variable was categorical rather than continuous.

TABLE 1
Descriptive Statistics

		Mean	*SD*	Min.	Max.	1	2	3	4	5	6	7	8	9
1	Formal Control Structure	0.55	0.504	0	1	1								
2	Intragroup Conflict	−0.019	0.614	−0.915	1.835	0.34*	1							
3	Informal Hierarchy	0.668	0.384	0	1	−0.002	−0.37*	1						
4	CPO	0.129	0.524	−1.329	0.789	−0.29†	−0.49***	0.3†	1					
5	Group Size	19.3	7.155	8	35	−0.06	0.19	0.16	−0.18	1				
6	Soap Production	0.6	0.496	0	1	−0.23	−0.02	0.07	−0.08	0.42*	1			
7	Shea Butter Production	0.35	0.483	0	1	0.14	0.1	−0.12	0.12	−0.35*	−0.9***	1		
8	Group Member Attrition	1.424	2.119	0	9.714	−0.13	0.09	−0.08	−0.09	0.26	−0.01	0.07	1	
9	Presence of Male in Group	0.075	0.267	0	1	−0.12	0.07	−0.001	−0.05	−0.19	−0.15	0.19	−0.14	1

Notes: $n = 40$; formal hierarchy = 1; flat = 0.
† $p < 0.10$
* $p < 0.05$
*** $p < 0.001$,

TABLE 2
Results of OLS Analysis for Intragroup Conflict and Collective Psychological Ownership

Variables	DV: Intragroup Conflict				DV: Collective Psychological Ownership
	Model 1	Model 2	Model 3	Model 4	Model 5
Formal Control Structure	0.417*	0.268	0.416*	0.975**	−0.297^{+}
	(0.19)	(0.18)	(0.17)	(0.34)	(0.16)
Informal Hierarchy			−0.593*	−0.214	
			(0.23)	(0.30)	
Formal Hierarchy × Informal Hierarchy				−0.834^{+}	
				(0.44)	
Collective Psychological Ownership		−0.499**			
		(0.17)			
Constant	−0.248^{+}	−0.102	0.149	−.104	.293*
	(0.14)	(0.14)	(0.20)	(0.23)	(0.12)
F	5.03*	7.33**	6.33**	5.72**	3.38^{+}
R^2	0.117	0.284	0.255	0.323	0.082
Observations	40	40	40	40	40
Standard errors in parentheses					

Note: DV = dependent variable; formal hierarchy = 1; flat = 0.
$^{+}p < 0.10$
$^{*}p < 0.05$
$^{**}p < 0.01$
$^{***}p < 0.001$

Table 2, we find that CPO is negatively associated with hierarchical control structure ($p = .07$) (Model 5) and with intragroup conflict ($p = .006$) (Model 2). To test the indirect effect between formal control structure and intragroup conflict, we relied on the use of a bias-corrected bootstrapping technique that is accurate in testing mediation (Hayes, 2013). This approach does not constrain the distribution of indirect effects and is ideal because such effects often follow nonnormal patterns (Edwards & Lambert, 2007; Preacher & Hayes, 2008). Table 3 displays results for the mediating effects of CPO using a 95% bootstrapping confidence interval (LLCI: .005, ULCI: .418) that does not contain 0. Hence, we find support for Hypothesis 1b.

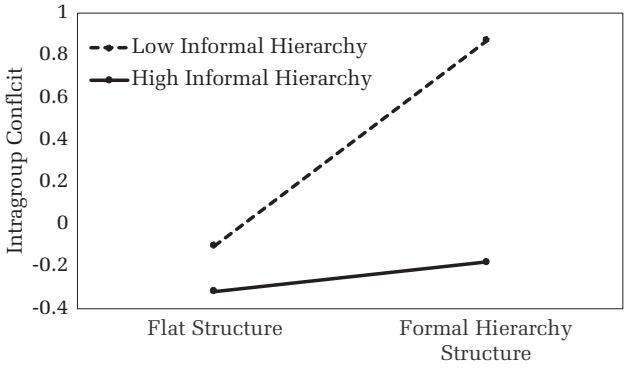
To test Hypothesis 2a, Model 3 includes the independent variables (informal hierarchy, as reflected in the presence of age heterogeneity in a group, and formal control structure) and Model 4 adds the interaction term between these variables. In support of Hypothesis 2a, we find in Model 4 that the interaction term is negative and partially significant ($p = .066$). As Figure 2 further illustrates, when informal hierarchy is largely absent (i.e., when members are all perceived to be of similar age), groups with formal hierarchies experience more conflict than do those in flat structures. However, relationships in Figure 2 also suggest that in the presence of an informal hierarchy, formal hierarchical and flat control structures have relatively similar effects on intragroup conflict. This result implies that when an informal hierarchy is present, the fit between formal control structure and ownership structure is less important.

To test Hypothesis 2b, we again relied on the use of asymmetric bootstrap confidence intervals, which is the most widely recommended procedure for

TABLE 3
(Conditional) Indirect Effects of Formal Control Structure on Intragroup Conflict

(Conditional) Indirect Effect	Informal Hierarchy	β	*SE*	LLCI	ULCI
Indirect effect of Formal Control Structure on Group Conflict via CPO		0.148	0.101	0.005	0.418
Conditional Indirect Effect of Formal Control Structure on Group Conflict via CPO	Low (Minimum)	0.138	0.113	0.02	0.398
	Average	0.063	0.079	−0.019	0.245
	High (+1 *SD*)	−0.012	0.101	−0.182	0.131
	Index of Mediated Moderation	−0.195	0.19	−0.623	−0.002

FIGURE 2
Interaction Effect between Formal and Informal Hierarchy



moderated mediation (Hayes, 2013, 2015). Given that the results of Model 4 suggested statistical significance of the moderator at the $p < .10$, rather than $p < .05$, level, we set the confidence interval to 90% rather than 95%. As presented in Table 3, the 90% confidence interval for the index of moderated mediation does not include 0 (LLCI: −.623, ULCI: −.002), which supports the overall presence of moderated mediation. However, examining the deconstructed confidence intervals suggests that it is only at low levels of informal hierarchy (–1 *SD*) that CPO acts as a significant mediator (LLCI: .02, ULCI: .398). Comparatively, confidence intervals at both high (LLCI: −.182, ULCI: .131) and mean (LLCI: −.019, ULCI: .245) levels of informal hierarchy contain 0. These results suggest that while CPO remains an important mechanism that helps to explain why formal hierarchical structures impact intragroup conflict when informal hierarchy is not present, it fails to explain this linkage when informal hierarchy features more prominently.

Additional analysis on group effectiveness. While effectiveness of the groups was not our theoretical focus, this information was valuable to our partner NGO, and in our data collection we therefore included several single-item questions with the intention of providing them with practical insights. Based on subsequent analyses on this data, we identified some interesting trends suggesting that group conflict can indeed have negative consequences on several aspects of group performance. For example, group conflict is negatively related to the frequency with which IGG members participate in their group's activities ($t = -4.29$, $p = .000$) and the extent to which members put the group's interests ahead of their own ($t = -3.68$, $p = .001$). Finally, group conflict also predicts the extent to which members violate the rules of the group ($t = 4.24$, $p = .000$). Collectively, our results point to the pervasive effects of conflict on the effectiveness and potential viability of groups.

Follow-up interviews. We subsequently conducted a series of follow-up interviews with study participants. The general purpose of the interviews was to obtain illustrative stories and examples that would deepen our understanding of our hypothesized relationships. To do so, we returned to the location of our field experiment in northern Ghana approximately four months after our final data collection phase to conduct a series of one-on-one and group interviews with a subset of communities that were purposively sampled based on extreme cases (Eisenhardt & Graebner, 2007), as well as follow-up discussions with managers and field officers at BetterLife that had been involved in the field experiment. To identify potential interviewees, we first broadly sought out a subset of cooperatives assigned to both the hierarchical and flat condition that had either experienced very high or very low levels of conflict. One of the authors and a field assistant were able to interview individuals within 10 different cooperative groups. Almost all were one-on-one interviews, with the exception of a few interviews with two or three people together, and typically lasted between 30–60 minutes. We primarily worked through community translators. One BetterLife field officer was always present to facilitate introductions, but maintained distance from the interviews as they were being conducted to minimize perceptions of coercion or problems of social desirability bias (Paulhus, 1991). Table 4 provides an overview of illustrative quotes.

Our respondents generally provided affirmation for our quantitative findings. For example, we heard that a hierarchical structure tended to cause confusion around the appropriate roles for members, and resulted in a decrease in CPO:

> "I'm the leader of this thing"—that normally brings disagreement because the other [person] will think you will dictate for them, because in a situation whereby all of you are taking the thing upon yourselves and everybody is contributing very well, that's why it is good that everybody should be [on] his own [rather] than to have a leader, because otherwise they will be looking down on you and you will have to say. . .you are the group leader, so whatever you say [is] final. So it normally [brings] confusion or conflicts.

Additionally, respondents described that a lack of CPO led to conflict for two primary reasons. First, we

TABLE 4
Qualitative Data Table

Illustrative Examples of the Relationship between Structure and Conflict
Flat
We don't have a chairperson, we are all chairpersons. Because we all do the work. We call the meetings. There are no quarrels. Since we divided it and [started] doing the work we are all doing part of the work and chatting, we are all united and teaching each other how to make the soap for it to be good and so we can go and sell and make money. (S4: 112)
Ladies for instance, they normally behave like children, because if they say this person should lead, or do this it will normally bring confusion. But now that all of them are chairpersons, it helps them to do more, it really helped them a lot to get more knowledge about each other, this person will contribute, this person will contribute, and at the end of the day they will come out with a good idea. (A2: 9 and 10)
Hierarchy
Those who are the leader normally want to control or dictate on those who [aren't]. Because of that they normally [cause] conflicts. . .They don't really care about whatever the person is saying, those who have a leader, in [their] opinion, that person or fellow wants to dictate to the group so it will result [in] conflict. (F12 2: 24)
Maybe what they have experienced is that the chair lady says something and you don't respect her or you don't value what she is saying, there is misunderstanding between 2–3 people, that will result in conflict. If they choose [someone to be their] chair lady, and she says something, and [they] don't respect her, it will result [in] conflict. So their group they have not experienced something like conflict, but the chair lady is comparing the group to others. Because she has seen groups that form and then in the latter part, they will dissolve. (A1: 2)
Illustrative Examples of the Relationship between Structure and CPO
Flat
Just as you needed us today, if one person owned the group you would have had to only meet the group leaders, but since the group belongs to all of them that's why they are all involved. (S2: 63)
That is how it is, since you do not have a chairman everyone knows the work is something [they need] to be serious about. If we had a chairperson, if anything happened everyone [would] look to the chairman and say the chairman had not said anything or the chairman. . .did not make us do this, but now that we do not have a chairman everyone knows. . .[that] I am doing my own work. (S3: 84)
We are together doing the work. There's no leader who's taking care of [everyone]; no, we are [all] leaders so we will work together as members. . .If the things get finished, how you can come together you can [see money being earned]. We, the production department, these people will bring the money, we will give some, so that they will go and buy the necessary items for us to start again. That is what we were doing, and we were doing it very well, and our people do go to the market, those who are the marketing department they do go to sell, bring our money, anyway our [income] is improving [little by little] Gradually, gradually, we are moving forward. (A4: 38)
Their responsibility doesn't lie in one person. Let's say you're the organizer, and you do not have a mobile phone. They can take that responsibility to go around and inform others that there will be a meeting tomorrow. (F1: 1)
In their group they don't have [a] leader and it's really helped them because everybody is contributing or participating in the group because we don't have [a] chairperson [who is appointed] to come out and talk or to lead, so because of that everybody is contributing for the good. (A2: 12)
Hierarchy
That is the issue, that maybe the idea that the leader is bringing out, most of them will not understand or they don't agree with the leader and that is why they will stop coming to the meetings. So that is the issue. Examples? She is recommending for more meetings in the group, if they have more meetings, this one will bring this idea, another person will bring another one, so that they will look for the best one, the one that will help them and then they will choose. (F29: 6:29)
"I'm the leader of this thing"—that normally brings disagreement because the other [person] will think you will dictate for them, because in a situation whereby all of you are taking the thing upon yourselves and everybody is contributing very well, that's why it is good that everybody should be [on] his own [rather] than to have a leader, because otherwise they will be looking down on you and you will have to say. . .you are the group leader, so whatever you say [is] final. So it normally [brings] confusion or conflicts. (F12 2: 31)
Maybe if they choose one particular person to be a leader in the group, it might come to a time that that leader will want to overrule them. . .if they choose Mr. A to be the leader, and Mr. C does something, then everybody will keep quiet, waiting for only Mr. A to address that disagreement in the group. (39: 6: 27)
Illustrative Examples of the Effects of CPO on Intragroup Conflict
Flat
If she is in production and something is going wrong with the finance group, at that moment, that week she can go to help them and even get [into the accounting to see] what happens to this money because it is going to help the group in general. So the entire group all members understand that they have to work to sustain the group. (A1: 6)
We always meet once a month. . .so when we meet, the marketing group tell us that when they send the soap to the market [people] are not buying, and the cup that we [sell] for 1 cedi (Ghanaian currency), others sell it [for] 50p, so what will we do about it? We [could] also reduce, and then sell it [for] 50p, and we said no, we won't do that. . .we said we will do the research and see why they're selling at 50p because maybe they omitted something there, that's why they are selling like that. (A2: F8)

TABLE 4
(Continued)

Since we are divided [into committees], when you see this person you know each person's job, and each person can teach [others] if [they do] not know how to do it...We all know the group belongs to us. The way we are divided everybody knows what [they are] doing but we can still help others when they go wrong. . .the group has helped me to learn a lot of things, bar soap and liquid soap, and if I am in need I can get up and work to reduce my need. (S2: 58)

When we are [making] the soap, [we] take the chemicals, and ask ourselves, what is this? What is it used for? So everybody is trying to say what he or she knows. But we are only women, so everybody try to say what she knows, so that we won't forget. And we [do] not even always point to one person, "Oh. . .you say it; the next time you raise your hand," and. . .just point at one person. No, the [ones that] even don't raise [their] hand, you point at them. When we point at [someone] and [they] don't know [the answer], and [we tell them], it will [stay in their] brain, so that the next time when [we] point [at that person, they] will know [the answer]. [Interviewer: So you're testing people's understanding?] Yes, when we are in the process of understanding, we always test ourselves. But we do this when we measure the oil; we ask ourselves, what is the next thing we will put there? And those that are not talking, we force them to talk, because [we cannot] talk alone; it's for all of us, so we want everybody to participate. (A2: 8)

They. . .like to be in the group more than to be separate, for whenever they come together they say ideas to each other, and they. . .try to resolve. . .things, apart from. . .their group work. When they are in their group weaving, you will see that they [have] a lot of fun, and then they [enjoy] the work, and the work [gets done quickly]. . .You. . .realize, [a person] who [could not] even weave one [basket], by the end of it she might have [done] two or three, so the group [helps people] a lot. (A3: 24)

The group was successful because when they are in a group, they share ideas, and it will also help them to weave their baskets fast fast fast, [but] when you are sitting alone. . .you cannot do it like that. (A3: 25)

Because of the division of labor, everyone does what she is supposed to do and if you do not know how to do a particular part you can ask one another and be helped. (S2: 62)

As a people we come together, talk together, discuss together; that is why we are saying it is for all of us. If someone knows how to weave well she can help others to make the basket. (S3: 92)

Hierarchy

To me. . .people will be annoyed with those who are lazy, sitting there. Because I will not work for you. Because the group is for us, not for me alone. So we all have to work, so if you are sitting there and you don't work, I will be annoyed with you, and I will tell you. So [do] people [berate] those who are not doing their work? Yes, they talk to them. Why are you [just sitting there]? You think the group is for me alone? It's for all of us; if they are sharing you have to collect some, so you have to work, so next time you will see that person too is working. (A3: 20)

If we are picking a leader to take care of us, the work will [slow down]. Because if we are [doing] it in that manner, one day the leader will become reluctant [to lead] and the group will fail, will fall down. . .That's why we don't want to pick one person to become a group head. Because the person may one day become tired, and it will make our group. . .feel reluctant [to work]. (A4: 38)

In their group when they see that their leader is not doing his or her work then they criticize [them] and then let [them] understand that what [they are] doing is not correct, and then [they have] to desist from it. . .One example is the leader or chairperson called [a] meeting; [people] came and then the chair was not there, so they sat for the meeting and then they discussed the issue. . .then after the meeting they [followed] up [at] the chairperson's house. When they get there she [was] not there, [so] they waited. . .the next time she called [a] meeting they [told] her that [last time she] called [the] meeting, and then when they came the last time she was not there, so what she did was not correct, and then she has to desist from it. Then she agreed. (F28: 6: 4)

If we rely on one person, and the person becomes tired [then we] say that maybe a different person should also take [control], maybe that person [is] lazy, you know we are not the same. We are human beings but we are not the same. Maybe I'm a hard worker. Maybe Enora is not a hard worker. Maybe if you give the group to Enora, it may make [shake up the group] which we wouldn't like. . .maybe that [person is] doing her own work in the house, and [is] not. . .able to come out and [organize] people so that the work will go successfully. . .That's why I'm saying that if. . .it happens like that the group will [be shaken up]. . .[Misunderstandings could arise] among us. So if it [happens] like that, you see another person will also say, as for me, I also have work in the house, while you people were coming I was doing some work in the house, and they call me I have to get down and come. One will also say as for me, the work is not for me alone, I will go and do my own work, so it will help me to [earn money], help myself. (F35: 6:25)

Yes, because they didn't do the work, they will always say they are leaders so those who don't have anything in the group should do the work. That's why others will say that they will not agree to do the work alone and [they will stand around and say they are] (fuzzy) leaders so they have to do the work correctly, that's why there is conflict. (A2: 14)

Moderating Effect of Informal Hierarchy

[Age diversity] doesn't bring any challenge because if you think the person is older than you, after the person suggests something if you don't like it you will just obey and respect the person, but say "Mama, what you said is not good." You will just respect her, and after you have said that she will know that you have given her some respect. So they don't have any challenges with the elderly. (C2: F7)

If they are in a meeting and someone elderly suggests something, even if it doesn't sit well with you, you shouldn't provoke the person by challenging [them]. (C1: F4)

You know, in our own dialect, they say "you are a child, you know how to run, but you don't know how to hide." So, in our group we realize that if there [are] grown-ups among us, we can do [things] better because when you are a child and you do this and it is not good, the older

TABLE 4
(Continued)

person cannot tell you at that point that it's not good because you are angry and you do that thing. The older person will [remember] it and the next day they will tell you that. . ."what you did the other day, it was not good, don't do that again." So we realize that the old people are always correct. . .they are teaching us how to become somebody in the future. How to talk to a grown-up person, even if we are in the soap making [business]. . .Like when you are angry with somebody, don't let everybody know that you are angry with the person. (C1: F8)

Sometimes, because they [elders] have experienced life more than [younger people], they try to guide them [along] a certain path and they feel [that] because they are more advanced than [younger people]. . .when they do things in [a] certain order, it will be good for them. (G2: 23)

When there is misunderstanding, especially [among] the young ones, then the old ladies will come in and say "don't do that; if you do that you will spoil the group," and talk to them and let them iron out the issues. (C1: F65)

heard that low CPO increases conflict because when group members are "me" oriented in their thinking they are more likely to engage in shirking behaviors, as they feel that someone else—typically the leader—will pick up the slack. As one informant described:

> When groups have a leader, the other group members feel like they do not need to work as hard because the leader will be there. Even when people just hear the word "leader" or "chairperson," it makes them feel like someone else will be responsible for getting things done.

The leader, in turn, in a similar "me" mindset, can sometimes feel that it is legitimate that their role is a supervisory one rather than to be directly involved in the work. This approach can cause resentment among the other members of the group, particularly in this context, where neither subordinate members nor leaders have formal education and task-related skills. Therefore, there is little to no relevant task-based expertise to differentiate leaders from other group members (Jung et al., 2017; Tarakci et al., 2016). One informant stated:

> They think [the] chair and vice chair are leaders, so they are not supposed to be working hard in the group, those people who are not leaders are supposed to be doing the group work. . .And it's not like that, for that one conflict will always be there because they will say it's. . . group work so we all have to do it equal, you are a leader, you are going to lead us to do the thing right, but not for you to sit and let the others [do] it. . .So, for that one there is [a] quarrel between us.

We also asked members to describe why they thought a flat control structure—and a high level of CPO—decreased conflict. Responses pointed to the development of a "learning" environment" as a primary mechanism, given that learning and knowledge acquisition are drivers of cooperative behavior in impoverished settings (Kistruck, Lount, Smith, Bergman, & Moss, 2015). Conversely, a lack of knowledge was a barrier in members' ability to participate effectively. Specifically, members described that each member was (1) more open to learning or taking direction from group members, and (2) more willing to share knowledge.

> We, the group, we respect each other a lot, so whatever they said, go and do this, we don't have a problem because we want the work to improve so we don't have [a] problem, any work at all.

> Human nature is that there are slow learners, and there are fast learners. So those who pick [things] up fast, when they come they assume all of them [coop members] know. So they want to always take up the whole thing and do [it], assuming they all know. But. . .they also add the slow learners too. . .so far as they create the awareness that you don't know and you want to know, they are ready to help you to learn...They don't intentionally withhold information, because they all work for the benefit of the group. If you don't teach the other person the right thing to do, it will affect the group. So. . .if you request [something], those who know [how to do it] are willing to share [the information] with you. Nobody withholds information.

This knowledge sharing in turn facilitated coordination and avoided conflict because (1) it avoided the barrier that a lack of knowledge of key aspects of the cooperatives' functioning presented, and (2) it facilitated redundancy so that when one group member was unavailable to complete a task, another could step in. In resource-scarce settings such as rural Ghana, redundancy among group members is particularly important because of the precarity of daily life—group members are commonly unable to participate due to migration, pregnancy, sickness, or even death.

> You cut one bar [of soap], you want to cut the [other] 20, they won't agree. They want everybody to cut one, so that everybody will get to know how it is. . .Because they feel like one day, each person will need that skill. . .So if you do something and you are not confident in it, you will find out from the other person who can do it and you will better your skills because when you do something, [and learn together, then it is better]. You are also eager to come and do it and it will be good. And if you do it and it's not good, you are too eager to do it the next time to be better than what you did.

> [A flat structure] makes them see the group as theirs because everybody is working, nobody is sitting. . .since

houses are far someone can play a role for another, especially when it comes to the selling. If they are far away, sellers can bring the products to [another member] to sell for them.

We also asked our informants to explain why the presence of an informal hierarchy attenuated the effect of formal control structures on conflict. Responses to this inquiry were twofold: First, as theorized, those higher on the informal hierarchy command obedience and respect among lower members:

If they are in a meeting and someone elderly suggests something, even if it doesn't sit well with you, you shouldn't provoke the person by challenging them].

Because old and young come together so that the oldest can tell the youngest what to do. . .but if [you are all the same age, there will be a quarrel] because we are all the same. [In this case], no one can advise this [group member] that what you are doing is not correct, what you are doing is wrong. But if the old person tells me that what I'm doing is not right, I respect that old person so I have to change.

Second, returning to the theme of learning, those high on the informal hierarchy contribute to the learning environment by teaching younger subordinate members how to behave in such a way that avoids conflict:

They are teaching us how to become somebody in the future. How to talk to a grown-up person, even if we are in the soap making [business].

When there is misunderstanding, especially the young ones, then the old ladies will come in and say don't do that, if you do that you will spoil the group, and talk to them and let them iron out the issues.

Because they are older people, they are guiding the young people to stay together in the group. Sometimes [there] can be disagreements, but if old people are there, they speak wisdom to you. People respect [older individuals], so [the people] don't misbehave in the group, so that's why she thinks the old people are part of the group.

While several of the responses appeared to us to be describing coercion by high-powered members, subordinate members did not necessarily perceive this to be coercive. Rather, their responses suggested to us that in this context, those lower on the informal hierarchy felt it was the responsibility of those higher on the informal hierarchy to teach. Therefore, subordinates took this guidance as "received wisdom' rather than coercion, suggesting that what may appear as a coercive use of power to direct the behavior of subordinates may in fact appear, to those subordinates, to be an opportunity to learn from powerful actors in certain settings.

DISCUSSION

Our findings reveal that groups with formal hierarchical structures experience greater conflict compared to those with flat structures in cooperative organizations. These differences are particularly driven by the lower levels of CPO that stem from the more individualistic orientation of formal hierarchies. Because formal hierarchies rely on the assignment of vertically differentiated roles and decision-making responsibilities, they highlight differences between individuals, undermine a collective sense of ownership, and reduce commitment in ways that increase conflict. Our qualitative interviews illustrate that in coops with formal hierarchies, low levels of CPO can lead to shirking behaviors and substantial disagreements between group members. In contrast, flat structures can engender a sense of shared responsibility and freedom, increasing commitment to the groups' outcomes and facilitating cooperative behavior. Indeed, our interviews illustrate that in cooperatives with flat structures, members are more likely to feel a profound sense of belonging, help others in daily tasks, and share ideas and knowledge in collaborative ways. Collectively, these findings demonstrate the key role that CPO plays in driving the relationship between formal control structure and conflict in cooperatives.

Our analysis also reveals the significant role of informal hierarchy in attenuating the effect of formal hierarchical structure on conflict in cooperatives. Specifically, our findings show that in the presence of an informal hierarchy, cooperatives with formal hierarchical structures experienced less conflict compared to cases when the informal hierarchy was absent. We suggest that this is because groups with formal hierarchies, when faced with increased confusion surrounding roles and responsibilities, were able to rely on the legitimate and socially accepted mechanisms that an informal hierarchy provides to help clarify things.

As Figure 2 illustrates, the presence of an informal hierarchy also helped to quell conflict within cooperatives with flat structures to at least some degree, as these cooperatives exhibited lower levels of conflict as compared to cooperatives with flat structures where no informal hierarchy was present. As our qualitative interviews suggested, an informal hierarchy serves not only as a source of authority but also as a source of learning, as members in upper levels of the hierarchy offer their teachings to subordinate members, who typically perceive the elders as wise and act accordingly. These dynamics may have penetrated into some of the cooperatives with flat structures, thereby

creating stronger learning and knowledge-sharing environments and helping to reduce conflict further in those settings. These results point to the salience of informal hierarchy in determining how conflict unfolds in cooperatives, and call for a broader examination of how informal institutions comparatively influence behavior in group versus individual-level conditions.

Theoretical and Practical Contributions

Our examination of how cooperatives are optimally structured, and more specifically the influence of (formal and informal) hierarchy on conflict within cooperatives, forms the basis for a number of theoretical and practical contributions. First, we contribute to the current debate within the cooperative literature surrounding the potential use of formal hierarchy as a means of addressing the enduring problem of conflict among members (Baldassarri, 2015; Ben-Ner & Ellman, 2013; Kaya & Vereshchagina, 2014; Storey et al., 2014). In doing so, we have endeavored to advance this debate beyond differences in normative opinions (whether a cooperative "should" or "should not" use formal hierarchy from a philosophical perspective), to more instrumental theorizing as to why formal hierarchy is expected to cause greater confusion among cooperative members, as opposed to clarity.

More specifically, we have highlighted CPO as an important theoretical mechanism for explaining how the choice of formal structure ultimately affects conflict within cooperatives. Our findings also shed light on the antecedent conditions for CPO. Building on work that has highlighted the role of job design and complexity in fostering psychological ownership (Brown et al., 2014; Pierce et al., 2009), we find that control structure is an additional mechanism that can influence the level of CPO. In addition, while prior work has identified a range of benefits of psychological ownership at the individual and collective level, such as job satisfaction and motivation (Pierce et al., 2009), we find that an additional effect of CPO is a reduction in group conflict.

Second, our study contributes to the broader debate within the management literature around the relative benefits of flat versus hierarchical control structures, and, more specifically, the role of hierarchy in alleviating or exacerbating conflict within organizations (Bunderson et al., 2016; Halevy et al., 2011b; Locke & Anderson, 2015; Ronay et al., 2012). Recent work has highlighted how the fit between status and power (Anicich et al., 2015), competence and power (Tarakci et al., 2016), and status and expertise (Jung et al., 2017) for individuals holding positions within a given hierarchy may help serve to reconcile conflicting findings. The results of our study suggest that "fit"—at the organizational level—may be similarly important with regard to different types of ownership structures.

These findings are significant given that many organizations, such as law and accounting firms, which are often collectively owned by a larger group of partners but managed by a smaller subset of hierarchically organized individuals, feature aspects of cooperatives. Similar organizational forms that incorporate aspects of cooperative ownership include industry and trade associations, labor or trade unions (Jarley, Fiorito, & Delaney, 1997), credit unions, and open source initiatives (O'Mahoney & Ferraro, 2007), all of which are designed to operate on behalf of a collective group but are also managed (to varying degrees) by a hierarchy (Puranam et al., 2014). In other words, while a misfit between *equal* ownership and *unequal* control at the organizational level may be highly discernible in cooperatives, such misfits may also serve as an underlying source of conflict in other organizational forms, where some degree of shared ownership and hierarchical control are simultaneously present. That is not to say that the use of a flat control structure within a centralized ownership structure would similarly be a misfit that leads to high levels of conflict. Because our data were restricted solely to cooperative organizational forms, we are unable to speak to the outcomes and mechanisms of other combinations.

Third, our study provides significant insight into how formal and informal hierarchy can interact to influence conflict. The limited number of prior studies examining these dual influences of power have treated them largely as substitutes. In other words, the common assumption has been that when "formal hierarchy decreases, informal hierarchy increases" (Diefenbach & Sillince, 2011: 1516). However, our study is situated in a context where informal hierarchy stems from broader, deeper, and more longstanding societal norms, and in this case it was the formal hierarchy—and the prescriptions for behavior that it implies—that was subsequently superimposed atop these longstanding informal institutional prescriptions. Therefore, the results of our study suggest that such hierarchies often coexist—but that their subsequent influence on behavior may differ significantly. That is, when (the presence of) informal hierarchy decreases, (the effect of) formal hierarchy increases. As work on institutional complexity has previously suggested (Greenwood et al., 2011), individuals often face competing prescriptions from multiple institutional forces, and we extend this work by explicating how

individuals respond to new and relatively contained formal hierarchy, in the face of competing prescriptions from authority structures that stem from broader institutional spheres. By integrating such work into the academic discussion surrounding formal and informal hierarchy (Magee & Galinsky, 2008), we deepen our understanding and prediction of anticipated outcomes that result when such institutional forces exist simultaneously. In so doing, we address a stated gap in the literature surrounding the importance of informal hierarchy in new organizations (Clough et al., 2019).

Also related to informal hierarchy, our qualitative data raises questions about how different forms of hierarchy are perceived differentially by subordinate members. We found that subordinate members reacted negatively to formal hierarchy, but appeared to be much more accepting of the prescriptions from informal hierarchy. In our qualitative data, we found hints that subordinate members not only accepted these prescriptions but, in fact, did not perceive them as coercive prescriptions at all. Rather, subordinate members perceived informal prescriptions as welcome guidance from a credible source of authority, and as an opportunity to learn how to behave in such ways that managed conflict. This finding has potential implications not only for cooperatives, but also for more traditional organizational forms, such as organizations with more centralized ownership structures looking to bolster the perception (by subordinates) of the credibility and legitimacy of higher levels of management. Our study suggests that tethering the authority of such management to broader social signals outside of the confines of the organization may be one way to achieve this.

Our study also has significant practical implications. As stated previously, a large proportion of the recent resurgence of cooperatives has been within the development sector; the formation of cooperatives within least-developed countries as a more inclusive means of economic development (Boone & Özcan, 2014; Cheney et al., 2014). Development organizations such as the one we worked with typically design their initiatives using a standard group-based template: (1) assemble a group of beneficiaries from a given community, (2) help the group to assemble a hierarchical structure through a voting process, (3) provide them with the tools and skills for some market activity, and (4) decrease involvement of the development organization in the cooperative so that it can flourish without the organization's further assistance (Sutter, Kistruck, & Morris, 2014). However, many such initiatives have faced significant challenges due to extremely high levels of conflict that often cause these cooperatives to lose momentum or even collapse (Cook, 1995). Our study suggests that this process itself may be causing such conflict, and undermining the groups' ability to be sustainable and make efficient use of the benefits provided to them.

Like most organizations, development organizations have elected to structure cooperatives using a formal hierarchy in order to facilitate coordination. Such coordination of activities is not simply related to internal activities within the cooperative, but also pertains to facilitating interactions between the cooperative and the development organization (i.e., scheduling training sessions, facilitating communication, etc.). However, it is important for development organizations to realize that because *they* are the driver behind the formation of the cooperative (rather than the members themselves), it is critically important to establish a sense of CPO among the cooperative members at an early stage. Consistent with Clough et al. (2019), our study emphasizes the importance of studying nascent organizations and realizing that actors' dispositions and situations collectively influence their ability to leverage resources effectively. In particular, we find that CPO is a collective disposition that is influenced by the formal and informal hierarchy (i.e., situation) that, in turn, influences the ability for the groups to transform the resources provided by development NGOs into successful enterprises. Most importantly, as our study shows, the damage caused to CPO as a result of using a formal hierarchy, and subsequent high levels of conflict, may significantly outweigh the benefits of coordination within some organizational forms.

Limitations and Implications for Future Research

Our study—and its limitations—foster a number of avenues for future inquiry. First and foremost, our study took place in a context where informal hierarchy was highly salient. While this was done purposefully to examine the underresearched interaction effects of formal and informal hierarchy, future research exploring such interactions in contexts where informal hierarchy is less salient may help to establish the boundary conditions of our findings. It is also worth noting that the cooperative group members within our study were almost exclusively women, and prior research has suggested some relevant differences between men and women, such as the latter's preference for flat structures, reliance on informal norms over formal structure, and a preference for shared decision making (Bird & Brush, 2002; Brush, 1992). We encourage scholars to

delve more deeply into the interesting terrain related to whether the relative success of the flat structure may have also been partially attributable to a "gender fit" between female-dominated groups and flat structures.

The relatively small size of the cooperatives in our sample is also noteworthy. While the vast majority of cooperatives are indeed fairly small, a number of larger cooperatives exist throughout the world (Baldassarri, 2015; Cheney et al., 2014). Within such large cooperatives, it is common to find at least some sort of quasi-hierarchical structures, such as councils, apexes, and sometimes even layers of formal managers and executives (Bleiklie, Enders, & Lepori, 2015; Cheney et al., 2014; O'Mahoney & Ferraro, 2007). Thus, it is likely that at some point in a cooperative's growth, the use of a formal hierarchy becomes necessary for maintaining effective coordination, despite potential damage to CPO.

Our study also took place within a context where resources were very scarce. Prior studies have found that flatter structures, with their overlap in task domains, can sometimes lead to territoriality (Bunderson & Boumgarden, 2010). However, our respondents did not find such overlap to be problematic, in part because of the strong collectivist culture of Ghanaians (Hofstede, 2001; Schwartz, 2006), but also because such task redundancy was critical in dealing with unforeseen circumstances, likely due to the precarious nature of their environment. These results may hold in other settings that feature high turnover and where redundancy is therefore valued. Conversely, actors in a less precarious setting may have found that the same redundancy that facilitated coordination in this setting may lead to conflict due to territoriality, information hiding, and a breakdown of group-level cooperation. Future research that explores which factors are likely to amplify or diminish concerns regarding territoriality would serve to contribute further to this conversation.

Along similar lines, due to the resource-constrained nature of our setting, few members had the ability to read, write, and speak English, or owned assets relevant to the functioning of the cooperative, such as cell phones or bicycles. Possibly as a result of this, it seemed that individuals in possession of such skills and assets appeared at least as likely to be elected to formal hierarchy positions as those elderly members who may have otherwise been elected based on informal, seniority-based hierarchies. We did not measure the informal hierarchy status of those elected, and therefore it is difficult to discern whether any overlap existed between formal and informal hierarchy. However, our observations and interviews with cooperative members suggested that formal and informal hierarchy were not necessarily congruent. In more highly educated contexts where these skills and possessions are more common, formal and informal hierarchy may be more congruent, thereby possibly leading to different effects.

Similarly, we may have found different effects had we used a rotation system for hierarchical positions. In such cases, given the sharing of positions and the possibility of election in the future, members may shift to a greater collective mindset and feel more responsible for outcomes as compared to nonrotating conditions. As a result, they may experience higher CPO in ways that attenuate the effects of formal hierarchy. However, due to sample size constraints and an effort to maintain the fidelity and distinctiveness of our conditions, we were unable to test these effects, and we leave this for future research.

We were also unable to collect more longitudinal data to understand the long-term effects of these control structures. Future research could study not only the longitudinal effects on these pilot groups, but also other potential benefits of hierarchy that we did not measure. Given that our interest was in improving the likelihood that these cooperatives would not falter because of conflict among members, we selected our outcome measure accordingly, and leave for future inquiry other potential benefits of hierarchy, such as coordination.

CONCLUSION

The cooperative organizational form, and the equal distribution of resources that this organizational form entails, can be an important tool to address many of the critical issues that are facing the world today, such as inequality and financial vulnerability (Cheney et al., 2014; Cruz et al., 2017; Davis, 2016; Ingram & Simons, 2000). While our study was set in the impoverished context of rural Africa, these challenges are not restricted to the so-called developing world, but are increasingly prevalent across the globe. Yet, despite the promise of cooperatives, they can also be characterized by conflict among members that, in turn, can lead to the eventual failure of such organizations. Our study provides important insights into how cooperatives can be structured optimally to increase their ability to address such critical issues.

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