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## Tackling ill-structured problems with cooperatives. A proposal for further research and application

### Zusammenfassung

In diesem Artikel führen wir mögliche Gründe an, dass Genossenschaften geeignet sind, komplexe Probleme in der Nachhaltigkeit zu lösen. Statt uns auf existierende Forschung zu stützen, ist der Inhalt dieses Aufsatzes hypothetisch und verbindet zwei Forschungsgebiete, nämlich Genossenschaften und komplexe Probleme. Komplexe Probleme wie der Klimawandel oder Ressourcenknappheit sind schwierig zu definieren und sind von verschiedenen Akteuren mit konkurrierenden Interessen und widersprüchlichen Anforderungen gekennzeichnet. In diesem Beitrag legen wir dar, warum und wie gewisse Eigenschaften von Genossenschaften sich für die Lösung von komplexen Problemen eignen – allen voran Nachhaltigkeit. Die Erörterung gliedert sich in zwei Teile: zuerst skizzieren wir die Charakteristika von komplexen Problemen und zeigen zwei Beispiele mit dem Schwerpunkt auf die Art der Problemlösungsfindung aus der Geschichte der Genossenschaften. In dem zweiten Teil des Beitrages beschreiben wir drei Merkmale von Genossenschaften, die aus unserer Sicht das Potential haben, zu Nachhaltigkeits-Herausforderungen beizutragen. Statt fertige Forschungsergebnisse zu liefern, möchten wir in der laufenden Diskussion aufzeigen, wie Genossenschaften zu den aktuellen Herausforderungen, mit denen sich die Gesellschaft konfrontiert sieht, beitragen können.

**Stichworte:** Nachhaltigkeit, Genossenschaftsgeschichte, komplexe Probleme, kreatives Denken, Potential von Genossenschaften

### Abstract

In this paper we argue that cooperatives are particularly well-equipped to solve ill-structured problems relating to sustainability. Rather than drawing on completed research, this is a conceptual article with the aim to connect two areas of research: cooperatives and ill-structured problems. Ill-structured problems such as climate change or resource scarcity are difficult to define, and include various stakeholders with competing interests and conflicting demands. In this paper we posit that certain attributes of cooperatives suggest their application to such ill-structured problems - foremost among them sustainability. Our examination proceeds in two parts: first we briefly outline the characteristics of ill-structured problems and highlight two examples in the history of cooperatives with an emphasis on their use to solve such problem types. In the second part of the paper, we detail three characteristics of cooperatives that we think endow them with the potential to contribute to sustainability challenges. Rather than deliver finalized research results, it is our aim to contribute to the ongoing discussion of how cooperatives could contribute to ongoingsocietal challenges.

**Keywords:** sustainability, history of cooperatives, ill-structured problems, creative thinking, potential of cooperatives

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## 1. Introduction, the research question and its relevance

Ill-structured problems are characterized by conflicting demands that are complex and rarely allow routine. Objectives associated with solving such problems, and the relevant causes for the specific problem, are often non-obvious. Usually, several stakeholders are involved, which can prevent effective decisions and actions. Often it is unclear who wins or loses to what extent.

Exemplary of such problems are issues of sustainability (Mitchell and Walinga, 2017), such as climate change, environmental degradation or resource scarcity. Business practice and academic research continue to claim that sustainability requires new business models and business logics (Mitchell and Walinga, 2017).

We posit in this paper that cooperatives are ideally suited to addressing the ill-structured nature of sustainability issues.

A look at the history of the cooperatives shows that cooperatives have long made an important contribution to social challenges. Cooperatives are increasingly becoming the focus of interest in the challenges we are now experiencing in our society. Cooperatives of all types have existed since medieval times and are often related to an organizational form of self-help (Natsch, 2005). Until today, the self-help aspect prevails in the definition of cooperatives as for example in Swiss governmental platforms: “Cooperatives prioritize development and mutual economic assistance” (SME Portal of the Swiss Government, 2021). Cooperatives do not necessarily have a common objective but share a similar organisational structure that is based on the law. This legal definition assures structural power distribution and direct democracy. Indeed, cooperatives have the unique structural feature of being owned by their members who can be elected to the board if interested (Morfi et al., 2021). In other words, the way cooperatives are organized and act, allows for a balancing of interests. Additionally, as we will show further, there are historical examples of cooperatives contributing to societal challenges.

Our underlying question is as follows: “*What characteristics allow cooperatives to tackle current ill-structured problems, foremost among them sustainability?*” This question emerges from the observations that (a) cooperatives have done so in the past and (b) in many cases cooperatives tackle problems which are not, or only insufficiently, solved by the market. We derive our conclusions from an extant review of literature. Ill-structured problems have been studied extensively by business organizations (see Laureiro and Brusoni, 2018).

Rather than drawing on completed research, this article is conceptual in its nature and seeks to propose, rather than conclusively demonstrate, a potential area of application and further research by connecting two areas of research. This proposal emerged from our collective multi-disciplinary experience, representing innovation management, social anthropology and history.

We formulate an academic opinion that may allow cooperatives to tackle current ill-structured problems, which are not, or only insufficiently, solved by the market - foremost among them sustainability. However, we do not claim that other types of enterprises or organizations do not do this as well.

Based on our literature analysis we found three characteristics that stand out for dealing with ill-structured problems in the context of business organizations (managing different frames, managing tensions and participatory management) which we also identified in cooperatives. Frames represent a model of reality organizing phenomena through people's filters. The dual nature of cooperatives can be looked at as frames- the economic frame and the social frame. The interplay of these frameworks evokes conflicts that need to be handled. Cooperatives are faced with managing the tensions that result from these competing frames. Cooperatives are managed in a participative manner, and a wider pool of views are brought on the table by their diversity, contributing to creative thinking in the ill-structured problem process. Thus, we think that studying cooperatives under the aspect of ill-structured problems is helpful to deliver an explanation on the ability of cooperatives to tackle ill-structured problems. Indeed, diversity plays a crucial role in the solution process of ill-structured problems (Laueiro and Brusoni, 2018).

Despite their moderate number given the entirety of companies, cooperatives maintain a strong presence. In Switzerland, some cooperatives that started small have turned into big economically successful enterprises (Idée Coopérative, 2020). Regarded by some as a sustainable model of economic activity to limit capitalism, by others as old-fashioned or not promising: Cooperatives divide opinions and hardly allow one to approach the topic from just one discipline. Thus, we see our contribution as an impulse to view cooperatives as a type of organization that could be helpful in tackling a variety of challenges we currently face. Following such an approach offers the opportunity that all the knowledge about ill-structured problems already on the table is applied in such a way that cooperatives follow training which are readily available for ill-structured problems and thus, could gain more impact. We regard this as relevant in the discussion about "cooperativism", because in this vein cooperatives exhibit the potential to contribute to sustainability challenges. So far it remains hardly unexplained how.

We conclude that cooperatives are well equipped to meet these challenges. It would be desirable if one could isolate certain approaches to solving this type of problems and thus transfer them to other forms of economic activities.

## II. The characteristics of ill-structured problems

Ill-structured problems tend to be complex, non-routine, and difficult to define. Potential alternative solutions, objective(s) associated with solving these problems, and the relevant causes for the specific problem, are often not obvious. The current as well as the end state are uncertain and require as processing mode a more delibe-

rate one of learning and discovering. The answer does not rely on a repertoire of methods or solutions that can be processed automatically (Laureiro and Brusoni, 2018). The information necessary to work on the problem is usually not readily available (Ellspermann et al., 2015). We often find such problems in sustainability (e.g. Mitchell and Walinga, 2017) including a wider set of shareholders as stakeholders in the problem solution process (Hahn et al., 2014). Such types of challenges require a comprehensive understanding of the environment, and to balance different stakeholder claims. At an organizational and societal level, multiple desired yet conflicting economic, environment and social elements need to be addressed operating in different, often complex frames (Hahn et al., 2014). How cooperatives frame such a problem plays a crucial role in the ability to meet the problem with a potential solution. Looking at the history of cooperatives, we see that they were conceived to tackle ill-structured problems: as protection against or foresight for challenges such as poverty, exploding housing costs, land use, etc. They address social needs by facilitating and formalizing the cooperation of groups or individuals. Despite the prevailing weakened/stale/outdated image of cooperatives, the participative organisation form is highly relevant as the “first and foremost associations of individuals” (Walk and Schröder, 2014). Groups in the problem solution process can play a crucial role. As Woolley et al. (2010) show, groups exhibit a general collective factor of intelligence, which is correlated to the average social sensitivity, the proportion of females in the group, and the equality of distribution, as well as the turns taken in conversations among group members. In other words, diversity plays an important role in the solution of ill-structured problems (Laureiro and Brusoni, 2018) and cooperatives are characterized in many cases of diversity.

### III. Broadening the history of cooperatives

Despite their prevalence in the past 200 years, cooperatives have remained until recently an understudied form of economic cooperation, especially when compared to corporations (Zamagni, 2017, 97). The past decade, however, has seen a number of new studies which collectively broaden and nuance the story of cooperatives. The traditional telling has cooperatives emerge in response to the disruptions and hardship wrought by the Industrial Revolution and Capitalism as a means for workers, farmers and consumers to band together (Ortmann and King, 2007).

While this forms an accurate representation of one dimension of the history of cooperatives, it is incomplete. Recent research has served to broaden and nuance the story of cooperatives. In particular, these studies challenge the single origin and diffusion interpretation of cooperatives—the interpretation that cooperatives emerged in Europe as a *particular response to the disruption of the Industrial Revolution and subsequently* spread across the world. Instead, cooperatives and cooperative ideas have (a) pre-Industrial Revolution antecedents, (b) flourished during the early stages of the Industrial Revolution as a viable alternative, rather than merely a reaction to, single-owner sites of production and (c) developed during and after the Industri-

al Revolution period through global linkages (Kamenov, 2019; Bose and Möckel, 2022). We would propose that as part of this broadening and reframing of the history of cooperatives, one could interpret them as having, at times, been deployed to address ill-structured problems.

For example, in pre-Imperial India, cooperative guilds served the purpose of providing members with financial services—a form of an ill-structured problem in a pre-banking society (Patmore and Balnave, 2018, 27). So too, the Indian intellectual Rabindra Nath Tagore's efforts to combat destructive patterns of consumption and production in British India through cooperative forms shows an early application to ill-structured problems (though the term itself, of course, was not in use then) (Bose and Möckel, 2022).

As these examples and others suggest, a more fruitful way to read the history of cooperatives may be as a prevalent social response—not only in Europe and not only during the Industrial Revolution—to any number of challenges relating to production, consumption, ownership and social welfare that neither civic nor capitalist entities are willing or able to (Freeman, 2019).

Rather than reading cooperatives as relics from the crisis of the Industrial Revolution, they can be framed as a highly flexible organizational form capable of mitigating a wide range of problems, including ill-structured ones. This form of organization, promoting self-help and local cooperation, exists everywhere with its own specificities. The oft-cited Rochdale model emerged in response to rising prices for household goods (Gurney, 2017, 109-132). In other contexts, cooperatives have also facilitated access to new technology—the invention of the cream separator in 1878 spawned the first Danish dairy cooperative four years later (Patmore and Balnave, 2018, 17). After the Second World War, cooperatives in Italy were explicitly promoted and fixed in the country's legal framework as a means of re-anchoring democracy (Restakis, 2010, 63). In Switzerland, alpine cooperatives rose in the 19th century together with bread and fruit associations leading to the creation of the general consumer association (Allgemeine Consum-Verein Basel (ACV)) in 1847 (Beccarelli and Purtschert, 2005), and the Zurich consumer association in 1851 (Brassel-Moser, 2008).

#### IV. Characteristics of cooperatives helping them to tackle ill-structured problems

From this short excerpt of the history of cooperatives we derive the thesis that from the beginning, doing business in the form of intelligent cooperation and taking social needs into account has been an integral part of the cooperatives tackling ill-structured problems. This fact is today not universally recognized, however. For some people cooperatives smell of an outdated, collectivist economic conception. Compared to the often family-run, professional entrepreneurship, they seem inflexible, static and unsuitable for some areas of the economy. These perceived advanta-

ges of more corporate business forms have weakened somewhat in the course of the economic and climate crisis. Cooperatives have reasserted themselves as viable alternatives to securing social justice and sustainable development and to facilitate a new, meaning-oriented, more inclusive economy (Mayo, 2013, 139; Webb and Novkovic, 2014), a development marked by the International Labor Organization's explicit promotion of cooperatives in 2002 and the UN's designation of 2012 as the "Year of the Co-operative," as well as growing interest among various stakeholders following the financial crisis of 2007 and, more recently, climate action protests (Michie et al., 2017, xxiv).

We identified three characteristics of cooperatives which makes them peculiar and might carry the cooperative's potential for success in sustainability problems.

### 1. MANAGING FRAMES – from an "either/or" to an "and"

Frames represent mental templates through which a problem is identified, organized and solved (Kaplan, 2008). They reduce information overload, give structure to situations and help to communicate them (Hahn et al., 2014). Frames act as cognitive shortcuts, which allow handling complex information and making sense of them (Orlikowski, 1993). They represent a model of reality organizing phenomena through people's filters, and defining their fields of vision. The dual nature can be looked at each as a frame – the economic frame and the social frame. Framing represents the thinking process, which delivers the "mental template that individuals impose on an information environment to give it form and meaning." (Walsh, 1995, 281). Such frames are created, updated and reproduced by labeling objects and attributes according to observed elements (Hahn et al., 2014). While the problem solution process evolves, different frames bounce against each other (Shmueli et al., 2006) or compete (Kaplan, 2008). In cooperatives, this can be seen, for example, in the case of the economic frame versus the social frame. While acting in the background, frames have facilitating as well as constraining effects (Orlikowski, 1993). Research exemplifies how somebody defines or frames a situation, has important implications of the options for a generated solution in the context of how a situation is understood (Keller and Yang, 2016). "The frame that a decision maker adopts is controlled partly by the formulation of the problem and partly by the norms, habits, and personal characteristics of the decision-maker." (Tversky and Kahneman, 1981, 453). On the one hand, by the definition of cooperatives, stakeholders of the cooperative are committed to the mission of the cooperative. Commitment to a common mission allows to agree on a collective, shared frame enabling the performance of the cooperative. On the other hand, addressing social and economic goals can evoke tensions of conflicting frames, which need to be managed. Capabilities in the management of conflicting framing processes help to develop an "and" approach rather than an "either/or" one and to link flexibly competing rationales or opposing demands. Solutions around conflicting frames and their integration enhance creativity (Miron-Spektor, 2011), and can even promote innovative

action (Mitchell and Walinga, 2017). The organization becomes better equipped for tensions and the relationship with various stakeholders (Vallaster et al., 2021).

## 2. MANAGING TENSIONS

The governance of cooperatives is challenged by tensions due to dual goals and to the multiple stakeholders involved (Ebrahim et al., 2014). Indeed, the member-driven enterprises constantly work on the balance between profit and the interests of members and communities. Members interested in participating more intensively in the decision-making processes can be elected to the board of their cooperatives (Morfi, 2012). Cornforth analyses three types of tensions emerging from stakeholders' divergences: 1. "between the board members and experts", 2. "between board roles of driving forward organizational performance and ensuring conformance", and 3. "between the board roles of controlling and supporting management" (Cornforth, 2004, 13). This idealist and pragmatic nature of cooperatives lies in the various social, commercial and environmental logics (Ashforth and Reingen, 2014; Bauwens et al. 2020; Borzaga et al., 2009). Maintaining the balance between business goals and members' voices is challenging (Puusa and Saastamoinen, 2021). But this conflicting nature also instigates a positive tension essential to learning and keeping the goals, and social and environmental needs at the heart of the business (Graetz and Smith, 2008). Cooperative business models are an interesting form of business especially in a time in which sustainability and human dignity are at the forefront of societal needs. Cooperatives allow diversity and dialog: "[cooperatives are] expected to balance the oppositions in such a way that tension gives way to peaceful and respectful coexistence between idealists and pragmatists. In such a case, a new, hybrid identity can emerge from the purposeful iterations between contradictory forces, a viable and sustainable 'middle way'" (Pina e Cunha and Clegg, 2018, 23). The creativity of solution-finding and the art of "keeping the balance" value the cooperatives for their organizational form. Interestingly, the cooperative business model is also used as a paradoxical user-centered business model to support the development of paradoxical thinking in the context of management education (Audebrand, 2017). With its tensions, cooperatives are considered complex organizations that function as "catalysts" (Jay, 2013). Taking into account and managing these tensions, as paradoxical as they may seem, are an opportunity to be stronger while ignoring them could result "in undesirable outcomes including stuckness and inaction, oscillation and mission drift, factionalization and internal conflict" (Jay, 2013). Creating and maintaining spaces for dialogue are one of the strategies that permit these human-centered hybrid organizations to maintain a balance and engage in managing the challenges in a participatory way (Battilana et al., 2015; Ismail, 2019).

### 3. PARTICIPATORY MANAGEMENT

Cooperatives are managed in a participative manner by a voting system and a larger scale of people invited to discuss and make decisions in the cooperative in order to solve problems. In the problem-solving process, teams are able to bring a wider range of knowledge and perspectives to the table (Kurtzberg and Amabile, 2001; Hoever et al., 2012). For example, individuals with diverse prior company affiliations pooled to a founding team allowed an increase in innovation because they provided new perspectives (Beckmann, 2006). When people pool their individual frames, a collective knowledge structure is likely to emerge (Walsh, 1995) as individual frames are synthesized into a shared, collective frame (Hey, 2007).

The dynamic created by participation allows the individual action to be connected to a collective dimension (Muñoz, 2021). While multi-stakeholder governance enhances the complexity of the tensions (Mason and Doherty, 2016), this “from individual to collective” dynamic also generates a “collective creativity” by triggering novice interpretations and discoveries that one alone could not have produced (Hargadon and Bechky, 2006). This dialogue, inherent to cooperatives, allows to overcome paradoxes mentioned previously by creatively managing tensions. It also asks for special communication effort and transparency: “Consensus-making, in which dialogue continues through to when the team is in alignment—while ostensibly complicating decision-making processes—can be strategic in helping find more creative and comprehensive solutions that allows an organization to better achieve social enterprise goals. But integrating diverse voices need not be done through purely democratic or non-hierarchical decision-making structures: embedded structures for feedback and consultation exist, and can also help capture internal and external demands” (Ismail, 2019).

Integrating voices empowers the participants of cooperatives that build a community identity, common goals, benefits and trust (Majee and Hoyt, 2011). Cooperatives’ more inclusive management have the potential of helping less privileged groups of people to be empowered (ibid.). Empowerment through inclusion, is a dynamic process, and a first step towards lifting people into shared governance (Tremblay and Gutberlet, 2012). The conciliation of economic and social goals, enabled also by the participatory management of the cooperatives, not only benefit the society and market in general, but have the potential, if succeeding to maintain a certain competitiveness and a multi stakeholder dialogue, to uplift individuals to a collective empowering effort. Empowering women through shared leadership of cooperatives is an example of successful participatory governance models (Bezboruah and Pillai, 2014; Morgan and Winkler, 2019; Onyejekwe, 2001). Cooperatives create spaces of dialogue where bottom-up and top-down voices meet. The opportunity for creative solution finding and empowerment of its participants if reached shows a great potential, although participatory governance is challenging, and also entails risks. Based on individuals, the direct democracy can endanger the well-functioning

of an enterprise: “as intrinsic motivations differ from person to person, a mission-oriented enterprise such as a co-operative succeeds in organising this diversity and consequently achieving substantial gains in productivity or it fails and is paralysed by internal conflict” (Zamagni, 2014).

## V. Practical and theoretical contributions and limitations

In summary, we deem these three characteristics of cooperatives to be helpful in their daily as well as strategic actions to contribute to the disruptive era we are facing (Gray, 2000).

Cooperatives have to handle a variety of tensions as described above from the point of view of scarce resources and conflicting goals. Teams that are able to develop solutions to conflicting frames tend to develop higher awareness and understanding of sustainability-related tensions and conflicts (Hahn et al., 2014). Working under such constraints as cooperatives face evokes efforts and skills that are helpful. Limitations, as for example budget, time, human resources but also knowledge, can lead to an increase of creativity (Runco and Acar, 2019; Hargadon and Bechky, 2006; Ismail, 2019).

We see a similarity in what cooperatives do and what ill-structured problems sometimes require as a solution. Many of these ill-structured problems can be addressed by a reconciliation of conflicting interests or an innovative action aiming at an intelligent solution for each participating party. Although the profit from such a balance of interests may remain minimal for each individual, there is the promise that the trade-off between conflicting interests can be kept within a “to be negotiated” set of boundaries. Budget, time and resources are limited. The balancing of different interests can also have a restricting effect and thus only allow action within a limited framework. By their peculiarities, cooperatives take into account various interests, maybe more than other types of organizations. The knowledge and experience of how to do this is not limited to cooperatives but seems to be of high importance in the context of ill-structured problems.

If cooperatives should contribute on a larger scale to tackle current challenges, the question that needs to be answered is how they could become more creative. Research is necessary for identifying conditions under which creative practices in the problem solution process are provoked and named. Training on creative thinking can have a significant impact on the quantity and quality of creative thinking and the formulation of ill-structured problems (Ellspermann et al., 2007).

A possible goal for these research questions could be, whether the answers to these questions can be used to isolate practices. These practices could be transferred to other types of organizations so that they become better equipped for dealing with hybrid-related tensions arising from conflicting goals. Cooperatives deal with challenges that are not applicable to other organizations. Yet, conceptualizing cooperati-

ves as a hybrid organization with a specific degree of hybridity rather than as a distinct type of organization (Battilana et al. 2015), could help isolate transferrable elements. Cooperatives offer an alternative that allows one to remove from a pure financial stance on entrepreneurial activities (McMullen and Warnick, 2016).

Due to the dual nature of cooperatives, and their use of addressing and solving specific needs in times of crisis, we believe that they could make a significant contribution to today's challenges.

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