Supporting Inter-Group Relationships in Human-Centered Chance Discovery

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ABSTRACT

Human-centered chance discovery involves ad-hoc teams of experts who inspect the output of a chance discovery algorithm and develop scenarios for decision making. The team members typically are from different areas, such as product design or marketing, and have relationships to their own teams in these areas. Therefore the inter-team relationships affect the performance of the chance discovery team. The issue of how to support such relationships is addressed by reviewing an earlier team support system that supported intra-team relationships rather than inter-team relationships as well as the theoretical concept of relationality. It was found that both do not sufficiently consider inter-team relationships. Therefore an interview study with 10 practitioners in Japanese tea clubs has been conducted with the objective to enhance the relationality concept. The study equally focused on experience in the tea club and the life history of the interviewee. The result suggests five new characteristics of relationality. The paper concludes by describing a system that implements these characteristics and extends the previous system to inter-team relationships.

Keywords: Chance Discovery, Computer Science, Harmony, Japanese Tea Ceremony, Psycho-Social Analysis, Social Psychology of Teamwork, Social Science

INTRODUCTION

The field of chance discovery has been established by Ohsawa (2003) more than 10 years ago. It considers a chance as an opportunity or risk for future decision making. Such chances can be identified by focusing on rare but significant events in a given data set. The first representative example of a chance discovery system was the KeyGraph system that clustered events according to co-occurrences in a graphical presentation. Sometimes two clusters were connected by bridge elements that represented events which rarely occurred together with elements in both clusters. The bridge elements suggest new combination patterns of elements from both clusters. The user can than create scenarios where these pattern play a crucial role. As there usually are more than one bridge element, pattern and scenario, a team of experts
will discuss the KeyGraph output. In this context the relationships within the team become important. A team where the members trust and respect each other and interact in a harmonious way, is more constructive and creative than a team that is dominated by negative relationships (Oehlmann, 2002).

An example of the tight coupling between the analysis of large data sets and intra-team team interactions is the double-helix approach (Ohsawa & Nara, 2003). The team interaction and the data analysis are considered as two strands of a helix. As described above data are analysed by KeyGraph and the result is discussed in the team of experts. The transcripts of the discussion are considered as new data, which are processed by the KeyGraph system. In repeating this process that helix reaches higher and higher levels, until the team reaches agreement.

The importance of intra-team interactions for the discovery process has also been emphasised by Oehlmann (2002; 2003), who has shown that such interactions may facilitate or prohibit the discovery of novel solutions. In a follow-up project Oehlmann (2006b) developed a model, which describes how improved scenarios for decision making can emerge during the human-centred chance discovery process. A crucial role in that model was the interplay between conflict and harmony.

Some authors, such as Jehn (1995) have argued that conflict facilitates creative problem solving. But this debate appears to have its root in a definitional misconception. Jehn investigated the consideration of different views in the team interaction as opposed to acrimonious interpersonal conflicts. Oehlmann (2006a) has shown how such constructive conflicts can be achieved and that the interplay between this type of conflict and harmonious interactions can lead to novel creative solutions. Such a constructive use of conflict has also been exemplified in the Innovators Marketplace Game (Ohsawa, 2010; Ohsawa et al., 2010), which promotes innovation by effective use of the process of chance discovery combined with aids for thinking and communication. During the game innovative ideas are created from conversations among the participants. These are the organizers of the game, inventors of new ideas and the users of those ideas. Inspired by the initial KeyGraph approach, the participants create business scenarios by inspecting computer generated graphs, which represent initial data. During scenario creation they combine elements of the graphs.

By contrast acrimonious interpersonal conflicts tend to prohibit successful collaboration (Schwenk & Cosier, 1993). Throughout this paper we consider conflict with such a destructive quality and how they can be avoided or if they arise, how they can be dealt with for instance by creating a more harmonious situation.

The influence of a harmonious predisposition on conflict situations has been widely ignored in the current group-psychological discussion. However this view has a long tradition in Asian cultures. For instance Confucianism has emphasised the balance between humans and nature as well as the balance between humans and heaven. This led to a perspective that placed humans at the center of a harmonious universe (Chen, 2020). Also, Taoism has focused on the natural equilibrium that involves all beings and their interactions (Fang, 1990).

Whereas some results have been achieved that contribute to the theory and practice of intra-team relationships, equivalent research of how these relationships are affected by the relationships with members of other teams is rather scarce. The remainder of this paper will first consider published theory and practice of intra-team relationships and identify limitations. In the next section, an earlier implementation of a team support system is described. This is followed by an introduction of the theoretical concept of relationality and a summary of important stages of its development. Based on these reviews, a psycho-social study has been conducted, which is described in the next section followed by a proposal for an extension of the relationality concept. This extension is suitable to explain issues of inter-team relationships. The subsequent section describes an actual implementation, which enhances the system described at the beginning. The overall approach
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