Harmony Strategies for Human-Centered Chance Discovery

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ABSTRACT

Taking the stance that a harmonious situation facilitates improved scenario creation of an expert team involved in chance discovery, a study has been conducted with the objective to identify strategies of increasing interpersonal harmony. A cultural practice that emphasises harmony is the Japanese tea ceremony. Therefore four tea ceremonies with the characteristics of novice/high formality, novice, lower formality, expert/high formality, and expert/lower formality have been recorded and interpretative phenomenological analyses have been conducted. The number of participants ranged from three to ten with an age range from 20 to 60. The results indicate strategies related to time, space and intersubjective positioning. In particular, they showed that intersubjective positioning, i.e., how the participants positioned themselves in their interrelationships to others, in terms of trust, support, competition and conflict, constrains the choice of harmony strategies. Based on the identified strategies proposals for the management of chance discovery teams are made.

Keywords: Chance Discovery, Computer Science, Conflict Avoidance, Harmony, Interpretative Phenomenological Analysis, Scenario Creation, Social Psychology of Teamwork, Social Science

INTRODUCTION

Human-Centered Chance Discovery

The research area of chance discovery has been initiated by Ohsawa (2003). The basic concept is related to the identification and the management of rare but significant events, such as potential risks or opportunities, in some domain or application. One of the first implementations of this concept was KeyGraph. Already the first contributions to the field included an integration of a computational analysis that offered a number of potential scenarios, with a human-centered component, where a team of experts discussed potential scenarios and decided, which offered the best opportunity or the greatest risk.

An example of this integration was the double-helix approach (Ohsawa & Nara, 2003). The two strands of the double helix represent the computational analysis and the team discussions. The original data set is analyzed by KeyGraph, and the result is discussed by the experts. This discussion is transcribed and the transcript represents new data which are then again analyzed by KeyGraph. As these steps
are repeated, the expert team moves to higher levels of the double helix until a satisfactory result is achieved.

Given the important role of human-centered aspects in the overall process of chance discovery, a key question is that of what determinants affect human interaction. An experimental study in the late ‘90s on discovering the behavior of an unknown device has shown that the social interaction between collaborators can affect the resulting discoveries and facilitate or prohibit creative solutions (Oehlmann, 2002, 2003). That led to the development of a model, which describes how improved scenarios for decision making can emerge in human-centered chance discovery (Oehlmann, 2006a). An important part of that model was formed by the interplay between conflict and harmony as a form of conflict avoidance.

It should however be noted that the term conflict is here not used as an acrimonious interpersonal conflict, which often is an impediment to successful collaboration (Schwenk & Cosier, 1993). The term is here rather meant as the constructive clash between two ideas that leads to a novel situation, because the interpersonal relationship is of a quality that allows a collaborator to give up some her ideas and accept the ideas of others (Jehn, 1995; Oehlmann, 2006a). However to resolve this type of conflict a harmonious predisposition of the collaborators is necessary. The benefits of such interaction between conflict and conflict avoidance have been exemplified in a study involving software designers (Oehlmann, 2006a). It was particularly shown that the resulting software products of the team that worked in a harmonious setting as a form of conflict avoidance were more creative than the products of the control group.

These results have a particular relevance for settings such as the Innovators Marketplace Game (Ohsawa et al., 2010). This is a novel tool for aiding communication and thinking in an innovative way. It has been conceived as a method to realise the process of chance discovery efficiently. The objective of the game is to conduct conversations in order to create innovative ideas. This requires interactions between the organizer of the game, inventors of new ideas and the users of ideas. The collaborators create business scenarios by combining pieces of basic knowledge that are located on a computer generated graph, which in turn visualises initial data. The interactions require a similar psychological situation of conflict and harmony as outlined before.

Similarly, in the software design study mentioned above, the designed software was improved, because the collaborators established relationships among each other by making their background understanding of those relationships explicit and communicating it among each other. As Ohsawa (2010) has pointed out, this has particular relevance to computer-aided co-creation of scenarios, because the user’s attention to objective data and the computer-generated result based on those data tend to ignore the user’s background understanding, which is very essential for the co-creation process.

The experimental studies on scenario creation and the theories based on those studies have been complemented by the development of computer-based analytical tools. The application of KeyGraph to the transcripts of team discussions in the double-helix approach can be viewed as analytic. Another tool for analysing the relationships within an expert team and helping them to externalise the knowledge about such relationships is the Social Diagrammatic Language (SDL) (Oehlmann, 2005a). SDL provides a set of diagrammatic elements that allow a team member to generate diagrams that characterise relationships to other team members (Oehlmann, 2005b, 2006a). In essence this is a social visualisation in addition to the data visualisations that are generated by tools such as KeyGraph.

SDL has been used in a number of commercial applications. One of these applications in customer relationship management has been described by (Patel & Oehlmann, 2006). Whereas these earlier applications were paper-based, recently a computer-based version of SDL has been provided (Oehlmann & Gill, 2011).
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