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commentary

Creating stories over distance

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Note: this is a response to Fiore and McDaniel's article title: Building bridges: Connecting virtual teams using narrative and technology, Jan. 2006.

Fiore and McDaniel consider the roles of narratives (stories) in the activity of distributed teams. In one of their definitions, they say a narrative "includes a protagonist, an antagonist (some obstacle to be overcome), a time, a place, and a central theme or concern, which is generally straightforward and has to do with the protagonist overcoming his or her barriers in order to succeed in a team task."

As a researcher and designer of real-time groupware technologies, my first reaction was that no software has yet been developed to directly support story-telling within distributed teams. Yet after some reflection, I realized that I was wrong. Story-telling *has* been addressed, but within the context of supporting the small-group design process. Indeed, much is known or how we should create software for this purpose.

How is small group design a form of story-telling? Usually, the design team has a leader--the protagonist--who is somehow responsible for the design process. The antagonist is the design problem itself; it is both the central theme driving the story and the obstacle that the team must solve in order to succeed. The protagonist leads the story by framing the design problem as it is known at the current time: its motivation, what the design should do, its general requirements, its users, its constraints. At this point, the design process diverges from typical narratives. The protagonist has introduced an (unfinished) story and the team begins to add to this story by offering design ideas, alternatives, critiques, refinements, scenarios of use, and so on. This is a living story, where many possible paths are presented and sometimes even followed in parallel. It is also stories within stories: the development of the design is the central story, while people's descriptions of particular design variations in action are sub-plots that build until they are accepted, rejected or incorporated as part of the main design story. These include scenarios of use (Carroll, 2000), task-centered walkthroughs (Greenberg, 2004), and enactment of the personas over the design (Pruitt and Adlin, 2006). Thus small group design is not only about story-telling, but story-creating. Some design processes, such as *participatory design*, even enrich the story's scope by making sure that the team includes people from a broad diversity of backgrounds--not only designers and engineers, but end users. As Muller (1992) states:

[T]he members of the design team serve as *peer co-designers* and bring their various issues to this common design environment. When the technique works well, the session proceeds as a sort of informal group brainstorming session through the 'mutual validation of diverse perspectives.'

Finally, small group design also embodies the narrative feature of "canonicity and breach" (i.e., where something goes wrong and what actually makes the story interesting in the first place). Design suggestions are all about proposing, critiquing, repairing, and countering. This give and take is what makes decision sessions both creative and enjoyable.

What do we know about small group design as story-creation? In 1988, Sara Bly performed an observational study of a pair of design collaborators that challenged the intuitive "conventional" view of the communal work surface (a whiteboard or paper on a table) as a medium for creating and storing a drawing artifact. She saw that the drawing process--the actions, uses, and interactions on the drawing surface--were as important to the effectiveness of the design collaboration as the final artifact produced (Bly, 1988). John Tang (1991) then classified the activities of small design groups, and revealed that expressing ideas comprise ~50% of what people did over the workspace. That is, marks made on this shared surface were primarily used to support the verbal story-telling of the design idea.

While a shared workspace is not necessary to all story-telling, the above research suggests that, at least in some cases, a system supporting story-telling and story-creating is more than just sharing talk and body language. Indeed, the role of the shared workspace has become a central theme in the field of Computer Supported Cooperative Work, where the workspace is seen as an artifact that mediates human-to-human interaction. For example, there is now a myriad of research on how distributed groups maintain awareness not only by direct communication (e.g., verbal talk, body gestures), but by monitoring what others are doing within the workspace (e.g. feedthrough), and how others' bodies relate to the workspace at its activities (e.g., explicit gestures and the consequential communications that occurs as side-effects of workspace activities) (Gutwin and Greenberg, 2004). These are summarized as a set of behavioural foundations called the *Mechanics of Collaboration* (Pinelle, Gutwin and Greenberg, 2003). In essence, the workspace and the visibility of people's activities around support how the team builds and maintains a common ground for the evolving story.

We can now provide a few simple answers to Fiore and McDaniel's questions. First, reconsidering the small group design process as story-telling clearly shows a compelling situation where stories are useful for distributed collaboration. Second, because the distributed team is creating a story, its affective elements are quite strong. Indeed, this "buy-in" to the story (and the design) is one of the reasons motivating team design efforts, especially participatory design (Muller 1992). Bly (1988) even found that sharing drawing space activities increased the attention and involvement of team members. Third, the actual group design process used can be viewed as the narrative form; their permissiveness or restrictiveness will certainly affect the social and cultural dimensions of the distributed group. There are certainly formal and informal processes that control how the story can be told, e.g. brainstorming to generate many ideas and to discuss them later (all are invited to contribute without criticism); who does the telling or controls it, e.g., a facilitator, authoritative team leader, or round-robin turn-taking (affecting team democracy and involvement); and how consensus is reached, e.g., Delphi technique (feelings of inclusion in decision making).

And now we come to Fiore and McDaniel's fourth question: What can we learn about story-telling as a tool for online collaboration from an interdisciplinary analysis of the narrative form? It is clear that most development of groupware work-surfaces has been informed by a technical perspective influenced by social psychology, i.e., what are the basic communicative behaviours of people working over a work surface, and how can these be supported by groupware systems? Fiore and McDaniel's paper suggests that we can also reconsider groupware design from a narrative perspective, an entirely different discipline that may suggest new ways of creating effective systems.

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