

Group Dynamics of Co-operative Creativity

Anjalika Bose

Umea Institute of Design
Ostra Strandgatan 30, SE-901 87
niso0002@student.umu.se
+46 76 8322 933

Nick Sontag

Umea Institute of Design
Ostra Strandgatan 30, SE-901 87
anbo0022@student.umu.se
+46 76 8452 723

ABSTRACT

This paper will address the group dynamics of co-operative creativity. We plan to focus on small groups of 3 to 5 people, addressing the roles of the participants within each group and discussing underlying human factors which contribute to group dynamics. More specifically, we will address the basis for conflicting/contrasting individual viewpoints within groups, and look to understand how a cooperative or uncooperative resolution of conflict, can lead to productive or unproductive end products.

Author Keywords

Group dynamics, creative group dynamics, cooperative creativity

ACM Classification Keywords

Group dynamics, creative group dynamics, group structure, conflict resolution, cooperative creativity, open communication, flexibility, negotiation.

INTRODUCTION

Collaboration with other creative professionals is becoming a necessary and common practice within the design community. Creative collaborations can lead to powerful ideas but can also easily breakdown, as disparities between partners emerge and conflict results. Interaction design being a field that is global in character, it is more important, than ever before to connect with designers, clients, and markets around the world. At the same time cultural and linguistic differences are creating new challenges to cohesive team-building and effective team-work. With such cultural differences what are the best ways of communicating, compromising, and negotiating? Why is finding common ground between partners sometimes so difficult? What research has been done in these areas and how can it help us to explain, understand, and cope with the issues we experience in creative groups composed of interaction designers? These are some of the questions that the authors explore, through research, personal observation, and experiences.

OUTLINE OF THE PAPER

This paper begins by defining the common underlying characteristics of any group and group dynamics. It then goes on to address creativity and certain unique characteristics of creative group dynamics; specifically the

open ended nature of its functioning, the relevance of and reasons for conflict and opposing viewpoints in a creative group, and the significance of cooperative creativity. The paper will then go on to contrast this research with observations of cooperative creativity within two test groups during a specific design project.

1 DEFINING A GROUP OF PEOPLE

A collection of people that possess interdependence among its members is a *group* of people. In other words a group of people is two or more interdependent individuals who influence one another through interaction. Very small collectives of people, such as dyads (two members), and triads (three members), and very large collectives are both groups. However, dyads possess many unique characteristics simply because they include only two members. The dyad is, by definition, the only group that dissolves when one member leaves, and the only group that cannot be broken down into subgroups. On the other hand, in very large groups, members can influence every other member and there is minimal interdependency. As groups increase in size they tend to become more complex and formally structured. Though each group has unique properties, there are characteristics that are common to most groups. These are the characteristics of interaction, structure, cohesiveness social identity and goals. [1] *Interaction* is defined as the action within a group that revolves around the *tasks* the group must accomplish. It involves the coordination of individual skills, resources and motivation, used by the group to make a decision, generate a product or achieve a victory. Other interactions spring from the interpersonal or socio-emotional aspect of group life. [1] The *structure* of a group is defined as the stable pattern of relationships among the members of the group, defined by **roles** and **norms**. These two elements lie at the heart of group dynamics. [1] *Group cohesion* can be defined as the strength of the bonds linking group members to the group. These bonds develop through shared experiences and interactions. Group cohesion includes the degree to which group members coordinate their efforts to achieve goals and plays a significant role in a group's potency, vitality and sustainability. [1] *Social identity* is that part of the self-concept that derives from one's membership in social groups and categories, but also self conceptions shared by members of the same group or category. [1] *Goals* define the purpose of the group. Groups do so many

things that their activities can be classified in a variety of ways. Joseph E. McGrath's circumplex of group tasks, for example distinguishes among 4 basic group goals: Generating, Choosing, Negotiating and Executing. (Fig.1.1) As Fig 1.1 indicates, each of these basic categories can be further subdivided, yielding a total of 8 basic tasks. These definitions of above common characters of groups shape the dynamics that exist within a group.

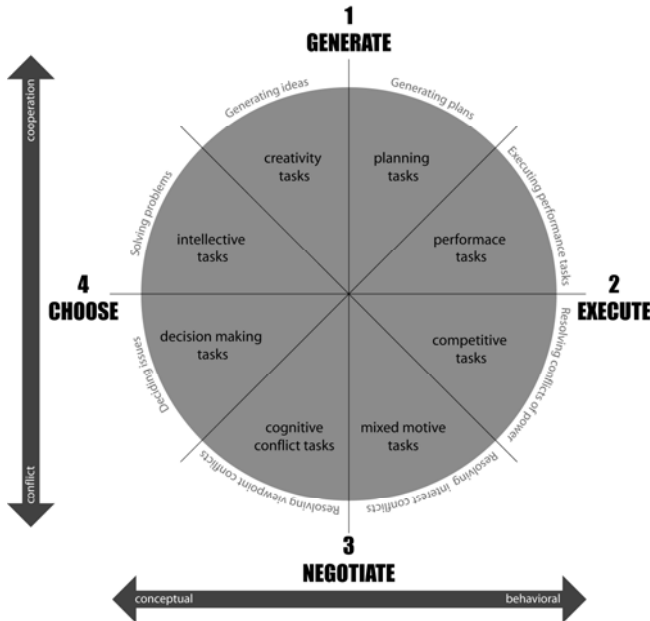


Fig 1.1 Joseph E. McGrath's circumplex of group tasks

2 GROUP DYNAMICS

Kurt Lewin (1943, 1948, 1951), who many argue is the founder of the movement to study groups scientifically, chose the word *dynamic* to describe group interactions. Group dynamics is hence the scientific study of groups. It is also a general term for group processes. [1]

The Nature of group Dynamics

The nature of group dynamics is a complex field of study. The following is an outline of theories which define the basic nature of group dynamics, within a more general and all encompassing framework of understanding. Firstly, what is the "*Groupmind*"? Durkheim (1897/1966) has stated that large groups of people sometimes reacted with a single mind. He felt that such groups, rather than being mere collections of individuals in a fixed pattern of relationships with one another, were linked by a unifying *groupmind*, or a collective conscious. A groupmind is thus a hypothetical unifying mental force linking group members together. Secondly, *Groups are greater than their parts*. Kurt Lewin (1951) formulated a theory of human behavior, called *field theory*, which assumes that the behavior of people in groups is determined by aspects of the person and aspects of the environment. $B = f(P,E)$ is Lewin's Interaction formula. Here each person's behavior (*B*) is a function of his personal qualities (*P*), the social environment (*E*). In other

words, a person's behavior in a group is the interaction of personal qualities and qualities of the environment, including other group members. Hence groups sometimes perform tasks far better – and far worse – than might be expected, given the talents of their individual members. Thirdly, *Groups are living systems*. A group acquires energy and resources from its environment, maintains its structure, and grows over time. In this sense, a group can be said to be alive. This is Bruce W. Tuckman's theory of group development: patterns of behavior will emerge and change over the group's life span. In addition, Tuckman postulates that most groups move through 5 stages of development, similar to a living organism: forming (formation), storming (conflict), norming (structure), performing (production) and adjourning (dissolution), over time. (Fig 2.1) (Tuckman, 1965, Tuckman & Jensen, 1977). Lastly, *Groups influence individuals*. Groups can alter member's attitudes, values, and perceptions and in some cases cause radical alterations in personality and actions.

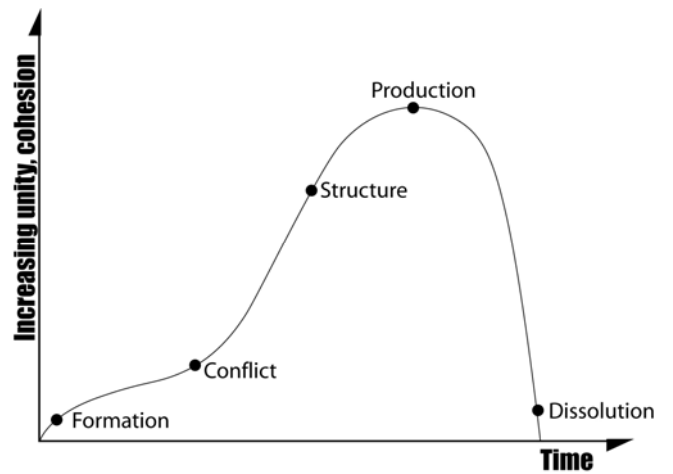


Fig 2.1 Five stages of group development

3 THE CREATIVE GROUP DYNAMIC

The focus here is on small groups of 3-5 people. By creative groups, we mean groups whose interaction, cohesion, social identity and structure, are defined entirely by the goal of fulfilling a creative process. What is a creative process and what are the unique features of a creative group dynamic?

Creative Group dynamics are more open ended than other group dynamics

It is typical for situations that require creative efforts as opposed to step by step reasoning, to have an *open-ended* character. A creative process is thus, most importantly, an *open ended process*. This means that if the of group's goal is intended to have a creative outcome, the interaction between the individual members of the group must be open-ended. Unlike other group dynamics, the creative group dynamic has a final result or *stop point* which is not exactly defined. The evaluation standards are hence less defined, than other types of groups. In a creative group, there occurs

constant matching, update, discussion and evolution of an initial idea. Hence for a process to be creative, the final stop point of the goal must be flexible and open ended as well.

Creativity is a function of the individual, the environment and the knowledge domain

Ingar Brinck, in his article on the “Gist of Creativity” [3], mentions three different components of creativity: the contributions of the *individual*, *the environment*, and the *knowledge domain*. An *individual* in a group is creative when his genetic makeup makes him open ended in his functioning. The importance of the *environment* to creativity is revealed when one examines the social and cultural factors at a given point in time. A society that promotes and encourages creativity, and that strives for novelty and unexpected solutions to problems, will probably foster more creative people than a society that is indifferent or negative. The *knowledge domain* of the individual, is characterized by a *description* and *kind* of knowledge possessed by an individual. These three constituents of creativity, namely the *individual*, *the environment*, and *the knowledge domain* are very important, as they determine the level of conflict, contrast and opposing viewpoints between members of a creative group.

4 THE RELEVANCE OF CONFLICT, CONTRAST AND OPPOSING VIEWPOINTS IN THE CREATIVE GROUP DYNAMIC

Conflict, contrast and opposing viewpoints are an inherent part of all group dynamics. Conflict is nothing but the disagreement, discord or friction that occurs when the actions of one or more members of the group are unacceptable to and resisted by one or more of the group members. Conflict can be **personal, substantive, procedural, or competitive**. [1] A *personal conflict* is the inter-personal discord that occurs when group members dislike one another. A *substantive conflict* is a disagreement over an issue that is relevant to the group’s real goals and outcomes. A *procedural conflict* is a disagreement over the methods the group should use to complete its basic tasks. A *competitive conflict* is one where the performance situation is structured in such a way that any one member of the group will succeed only if another member of the group fails. Another type of conflict whose prevalence can be noticed increasingly more is *cultural conflict*. One can categorize cultural conflict as part of procedural conflict, but in essence *cultural conflict* is the disagreement, discord or communication-lag that occurs due to differences in the cultures of individual group members. This is an era of massive cross cultural confluence, resulting in relatively culturally diverse creative groups. This results in new forms of conflict and opposing viewpoints, arising due to cultural differences. *Conflicting viewpoints can be beneficial or detrimental to the creative end product*. The nature of interaction between members of a creative group is open ended and hence usually leads to conflicting, contrasting, and often opposing viewpoints. In most groups, conflict is

viewed as negative to the cohesive strength or the identity of the group. In creative groups however, this is a necessary and inherent part of the group’s functioning, and only when resolved cooperatively, leads to the most optimum creative outcome.

5 DESIGNERS AS A CREATIVE GROUP: CONFLICT RESOLUTION THROUGH COOPERATIVE CREATIVITY AMONG DESIGNERS

When designers come together as a creative group they have a very specific task at hand. The creative process becomes more of a problem solving technique, and is most successful when the final outcome of the process is innovative and novel. When group members confront their problems and work towards a solution, conflict becomes a valued resource rather than a problem to be eliminated. This can be achieved through constructive cooperative tactics. These cooperative tactics include *open communication*, *negotiation*, *understanding*, and *flexibility*. Other factors which play a major role in enhancing or diminishing cooperative creativity are factors related to *individual characteristics*, *group structure*, *group purpose* and *resource*. Co-operative creativity could thus be defined as constructive processes and methods of conflict resolution within creative groups, which lead to productivity, innovation, and novelty in the end product. By *open communication* we mean a process of communication between group members, where each one’s idea is expressed, discussed and criticized. This leads to constructive brainstorming sessions, where the members of the design group, build on the strengths of each other’s ideas and are open to criticism of their own viewpoints, without generation of personal grudges against those passing criticism. In open communication, collaborative group members interact often, update one another, discuss issues openly, and convey all necessary information to one another. *Negotiation* is a reciprocal communication process whereby two or more members to a dispute, examine specific issues, explain their positions, and exchange offers and counter-offers. The process of negotiation leads to a solution that is agreeable to all the members of a group. This may not necessarily be the best solution or the most creative one, but is important in ensuring group cohesiveness, which further ensures a better chance of constructive evolution of ideas within a design group. *Understanding* is the mutual respect and trust that members of a creative collaborative group share; for how they operate, for their cultural norms and values, for their limitations and their expectations. *Individual flexibility* is that quality by virtue of which each member of a group remains open to varied ways of organizing the group and accomplishing its goals. This may mean a change in idea, goal or technique of fulfilling that goal. Being flexible and open to ideas enhances the creative process. The *individual characteristics* of each member in the creative collaboration affect the nature of cooperative creativity within the group. An individual in the group may be dominant or weak, vociferous or gentle, flexible or rigid, a leader or a follower,

a good communicator or a poor communicator, an optimist or a pessimist etc. The differences in these individual characteristics usually result in conflict that requires resolution by means of co-operation. *Group structure*, when unstable, disorganized, or undefined results in a lack of clarity in the roles of each individual within the group. This may result in personal and procedural conflict within the group. Hence it is important to define the group structure and the roles of each individual in the initial stages of the collaboration, to avoid deviation from the actual goal in mind. *Group purpose* can be defined as the common vision shared by the members of the creative group, with clearly agreed-upon missions, objectives and strategy. Here it is important that the goals are realistic and clear to all partners. *Group resource*, often overlooked plays a significant role in achieving the final goal. Group resource includes an adequate, consistent financial base, along with the staff and materials needed to support its operations. Group resource also includes sufficient Time to achieve its goals and nurture the collaboration.

6 CASE STUDIES AND OBSERVATIONS

Our two case study groups were part of a first-semester project called 'Design as a Game'. This involved graduate students from two different universities, widely varied cultures, and various levels of English-language proficiency. Students were randomly assigned to project groups of 3-4 students. Each team worked together to design an engaging game that was also educational for professional workers in different fields, addressing specific areas of conflict specific to each profession. Two of the project groups involved one author of this paper. While participating as contributors during this project work, the authors also observed their respective group's dynamics, interactions, conflicts, and resolutions.

Group 1

This team was comprised of three women and one man. One was a native English-speaker, and the other three had varying degrees of English proficiency.

While larger by one member than the other groups, this team struggled to agree on ideas or to designate tasks. These issues led to project delays, frequent inter-team disputes, and incompletely developed final project.

Observations

A group of four people without previous shared experience, as this team had, overreaches the limits of informal task sharing. In not formally designating a team leader, this team created a situation where decisions and goals were frequently reassessed and changed. There was no one with designated authority to make final decisions. Individual team member roles were undefined and responsibilities unassigned. These factors led to halting progress, frequently changed direction, and unequal sharing of work.

Cultural factors such as language and gender roles were factors in this team's dynamics. There was a tendency for

the female teammates to defer to the male teammate during decision making. Inequities in language proficiency made contributing to the discussion of ideas, plans, roles, etc. time-consuming, frustrating, and very biased towards native English speakers.

Evaluation

Communication was a weakness for this team. Without clear communication it is much more difficult to decide upon shared responsibilities, goals, and ideas. Hence, negotiation, a major factor in creating a cooperative work environment, was ineffectual. Like almost any group, this team had its share of disagreement and discord. Because of their lack of shared experience, however, this team conflict served to divide the team rather than to bond them. Likewise, because of the difficulties in communicating, it was hard to decide upon a shared goal or vision for their project, which would have been powerful and uniting guides. In post-project interviews with the team members, each mentioned many of the same things: 1) that they were relieved that the project was completed, 2) that they had learned many unexpected things about themselves and their teammates beyond the scope of the project, and 3) that they felt bonded to their team members. Despite the discord and disagreements that afflicted this team and the impediment to cooperative creation that their dynamic created, all team members felt more at ease with each other after this divisive experience than before, and were willing to work with one another again. They had bonded, despite their conflicts, through the shared and unifying experience. This leads the authors of this paper to believe that previous group experience as a cooperative unit may also be a contributing factor that enhances productivity in a creative environment. This experience may serve to enhance group structure, group purpose, adaptability, and understanding.

Group 2

This team was comprised of one woman and two men. One was a native English-speaker, and the other two, though from other cultures were fairly proficient in English.

This team seemed to have a fair level of open communication. Logical negotiation and brainstorming led to group sessions being energetic and focused. The individuals worked at a professional level with no personal conflict. However, on the downside, there was lack of clearly defined roles. This led to confusion regarding individual responsibilities during execution of the final deliverables at every stage, and thus often caused delay in the completion of the end-product at every stage of the project development.

Observations

The following describes two situations where the lack of clearly defined roles led to a delay in the production phase. The first situation took place after a preliminary brainstorming session. The group was required to create a dummy of the project, for user-testing on the following day.

Lack of clearly defined responsibilities within the team resulted in an imbalance in the quantity of work that each individual had to complete. Hence the deadline was not met and resulted in a setback during the user-testing phase, where the group failed to obtain completely valid feedback. This type of a situation acts as a deterrent to the creative process. The second situation occurred during the final production phase, within the 24 hours prior to the final project presentation. Once again due to the lack of clearly defined roles, the group spent a lot of time changing responsibilities and project direction. Also due to lack of planning, the production phase took longer time than expected, at the cost of group alertness and productivity during the project presentation. Due to acceptance by the group, of the lack of available time for the production phase, the group became complacent about the end-product, instead of further developing the project idea. This type of situation also leads to hindrance of the creative process.

Evaluation

In spite of the group being comprised of skilled individuals, they lacked the basic ability to define roles and manage time effectively and productively. Another notable factor is that often a high level of adaptability within the group resulted in almost no conflict whatsoever. This often led to complacency when it came to a concept or idea. Thus complete lack of conflict and a high level of adaptability in a creative group can often be a downfall. The lack of clearly defined roles, and the lack of any eventuality where a conflict could possibly occur, limited the creative capacity of the group. This was more apparent to the individuals once the project was completed. During the post-project interviews with the team-members, two of the team members agreed upon the fact that roles were very clearly defined while one of them disagreed. This contrast of viewpoints, after project completion, is a clear proof of the fact that there was a certain lack of communication during the group's collaboration and that the individual responsibilities were inexplicitly defined and ambiguous. This experience may serve to enhance definition of group structure and purpose, and also the value of time as a resource.

CONCLUSION AND FUTURE WORK

Via case studies of group dynamics within individual design teams, the authors have concluded that understanding group dynamics is fundamental toward building effective collaborative relationships. Within the teams studies, a lack of knowledge of the process of

effective team dynamics limited the creative progression. Developing this knowledge is even more important since cultural differences can further complicate communication and understanding. Appreciating the relevance of conflict, and applying the methods of conflict resolution through cooperative creativity within a group of designers is thus increasingly important today. The case studies throw light on the nature of conflict resolution, where lack of communication, cultural differences and poorly defined roles within teams are the key factors that hinder creativity at this stage. The same conflicts can however be resolved through a better level of understanding between team members, flexibility, open communication, clearly defined roles and creative brainstorming. The authors feel that additional studies specifically exploring the dynamics of cultural exchanges would be particularly fruitful in our field of interaction design. How does one create a common language of understanding and communication between designers from culturally diverse backgrounds? What are the methods of extracting the richness of this wide range of culturally varied ideas, knowledge and methods? Can tools, systems, approaches and strategies be developed to enhance creative process between culturally diverse creative groups? We conclude this paper with the above questions. Further studies on this subject would provide interaction design with more rich, global and novel visions and end results.

ACKNOWLEDGMENTS

We thank CHI, PDC and CSCW volunteers, and all publications support and staff, who wrote and provided helpful comments on previous versions of this document. Some of the references cited in this paper are included for illustrative purposes only.

REFERENCES

1. Forsyth, Donald R. *Group Dynamics Third Edition*, Wadsworth Publishing Company 1999
2. Mattesich, Paul W. Ph.D., Murray-Close, Marta B.A., Monsey, Barbara R. M.P.H *Collaboration : What makes it work Amherst H.Wilder Foundation 2001*
3. Ed. Sternberg, Robert J., *The Nature of Creativity-Contemporary Psychological Perspectives Cambridge University Press 1988*
4. Ed. Andersson, Åke E., Sahlin, Nils-Eric *The Complexity Of Creativity Kluwer Academic Publishers 1997*