

# A Conceptual Framework of Group Evolution: Considerations for Decision Makers and Analysts

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**Abstract**—This paper aims to develop a conceptual framework grounded in social science theory that could, in the future, be incorporated into decision making tools.

**Keywords**—framework; group evolution; computational social science; conflict; group dynamics.

## I. INTRODUCTION

When deciding the best courses of action to resolve conflicts, decision makers need to understand the individual, community and societal factors that drive group participation. The changing nature of conflict has presented numerous challenges in understanding the motivations and actions of the groups involved. Dispersed groups with multiple goals, can create complex dynamics making it increasingly difficult for decision makers to understand and operate within these environments. This is further complicated when the decision makers are from various organizations, across different domains and when they may also have multiple goals. Often even well intentioned decisions can have devastating consequences on communities due to a lack of cultural awareness and appreciation of the complexity of group dynamics. To enable more informed decisions, decision makers need to understand the nuance of group behavior and within this how groups form and evolve.

This research aims to develop a conceptual framework grounded in social science theory that could, in the future, be incorporated into decision making tools. Developing a conceptual framework of group evolution requires the integration of knowledge and techniques from across multiple scientific disciplines (including psychology, sociology, the political and economic sciences and mathematics). The integration of knowledge from across multiple scientific discipline will provide valuable insight into the framework and its future utility. Our aim is not to be exhaustive in our coverage of the social theory available, but rather capture a broad conceptual framework of the group processes associated with how groups form and evolve. The conceptual framework will provide a high-level overview of the multitude of factors pertaining to group dynamics that need to be taken into consideration when looking at complex conflict scenarios.

## II. THE INITIAL CONCEPTUAL FRAMEWORK

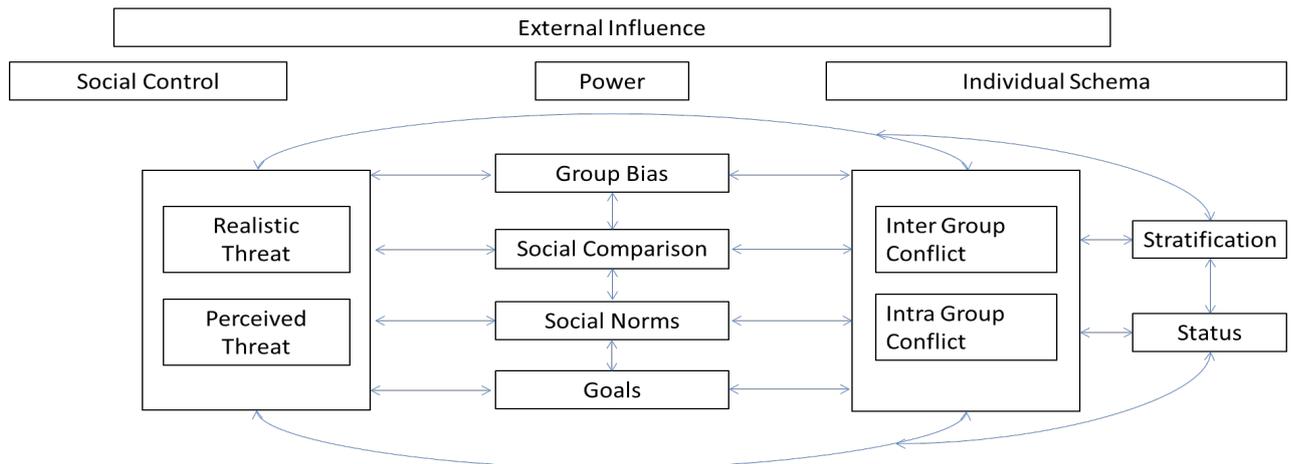
To identify the relevant theory across several social science disciplines we conducted an informal focus group with 6 social scientists. From this exercise a concise framework was developed to represent the key conceptual elements which help explain group evolution, please see figure 1 below.

The ‘floating’ concepts, (external influence, social control, power and individual schema) are unconnected via arrows as they are the overarching concepts that define and shape groups and all the other concepts identified. One example of an **external influence** is societal institutions such as educational establishments, religious organizations and government institutions. These play an important role in ordering an individual’s life. They provide social expectations and help the individual internalize societal norms.

Definitions of **power** are incredibly diverse, ranging from the power of specific resources used in one’s own interest to power as the capacity of a social system to mobilize resources for a collective goal [1]. **Social control** is the process of ensuring conformity to the dominant values and norms of a particular society [2]. This process may be formal, via law and police enforcement or informal through unconscious and implicit standards shaped by accepted cultural norms among individuals and enforced by individuals themselves [3].

The rest of the framework demonstrates the complexity and interconnected nature of group dynamics. Importantly, conflict is an integral part of group processes, both in the avoidance and resolution of internal conflicts and in the facing and defending of external conflicts. The arrows represent that each concept is inherently linked with all the other concepts.

The first box illustrates the concept of threat; research suggests there are two major types of threats that can influence attitudes towards ‘out-groups’. The first is **realistic threat**; this is threat which could significantly harm ones resources, power or general welfare and if often linked to military, political or material threats [4]. The second is **symbolic threat** which is concerned with threat to ones honor, religion, values or belief system. Here, out-groups that are perceived as having a different worldview can be seen as threatening to the cultural identity of the in-group.



Following the arrows, it can be argued that **group bias** and **social comparison** are both fueled by and fuel perceptions of threat. Individuals perceive a greater degree of similarity between themselves and others who they consider believe in similar things or behave in similar ways [5]. Equally greater differences than actually exist are found when individuals think or behave in different ways to them. In other words group bias and social comparison highlights both differences between groups and similarities within groups.

**Social norms** are social rules which define what is expected of individuals in certain situations. They are measures of what is seen as normal in society and are enforced by sanctions such as social inclusion and exclusion [6]. Social norms define and bind groups, offering a set of behavioral expectations and sanctions, which often not only reinforce affiliation to one's group, but maintain the group. When ones norms are seen as seen in tension with another, social comparison, group bias and threat are all highlighted.

Individuals in a group usually share some common **goals** or 'group goals'. Individual members will also have their personal goals. Group behavior is affected by whether these goals align or not. How leader's goals align with the group, vs. self-interest is a factor that is influenced by the stability of the group structure.

Conflict with other groups can arise due to many factors such as conflicting norms or differing or competing goals and be about many things such as access and distribution of resources. Conflict with other groups tends to increase within-group bonds, intra-group conflict on the other hand can lead to the group splitting into factions, and reduces the cohesion of the group and their ability to act as a team. Tajfel characterizes intergroup conflict by the agency that individuals within a society have to move between groups [7].

**Social stratification** describes inequalities that exist between individuals and groups within human societies. Stratification can be thought of in terms of assets or property, but it can also occur because of other attributes, such as gender, age, race, ethnicity and religious affiliation [6]. Stratification provides mechanisms for exclusion, particularly with regards to attributes such as gender or ethnicity Stratification can be seen as driving group bias and comparison, by comparing oneself, group and norms to others.

**Status** is the honour or prestige given by members of society to groups or individuals. This is based not just on economic standing, but on social standing as a whole and has a real manifestation in the life styles of the groups or individuals associated with a particular status.

### III. ONLINE FORUM

With the initial design of the framework complete and a short literature review conducted to ensure the concepts identified were underpinned by theory we then designed an online forum to provide additional detail to the conceptual framework. The online forum was designed to collate theory and suggestions from a selection of social science disciplines to underpin each concept within the framework with additional

theory, identify additional concepts and ascertain the relationship between each concept.

It was considered that this evaluation would enable the identification of missing concepts and relationships as well as the removal of concepts which were not considered relevant. The identification of further references and theory would also help ensure that the identified concepts were robust. However, unfortunately the online forum did not receive a high response rate and was limited to a sociological and anthropological perspective. Although the feedback received was positive in terms of the framework structure and concepts identified.

### IV. FUTURE WORK

The next step in the development of the framework is to seek out real-world scenarios of groups and situations that can be used to assess the framework in terms of its applicability and utility in generating actual models of those groups and situations, which will in turn drive a further round of framework refinement. It is hoped the application of a relatively abstract framework to a real world situation will help ground it and potentially confirm if the concepts within the framework are key factors in helping to explain group evolution.

The intention from here would be to first reach out to those within mathematics, computer science and decision science to assess the framework. Although this step goes beyond the scope of this paper, it is considered that the use of the framework in models of actual groups could be used to provide both explanation and understanding of complex societal and group processes in particular conflict and critical situations. To this end, the models produced would allow decision makers and analysts to generate hypotheses and predictions. In addition, in generating models from the framework we would be able to provide greater detail of the method for generating models and a more formal definition of the structure, relationships and syntax for modelling. However, it should be noted that the exact way in which the framework will be used in model is yet unknown. It could be coded into equations to be used directly within decision making tools/models or used as a qualitative tool to assist decision makers in considering the complex human factors at play when looking at the best courses of action relating to group evolution.

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