Shared Leadership:

Experimental Evidence On Its Antecedents and Impact on Team Outcomes

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Thesis submitted to the faculty of the Virginia Polytechnic Institute and State

University in partial fulfillment of the requirements for the degree of

Master of Science
In
Psychology

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02/18/2010

Blacksburg, VA

Keywords: shared leadership, collective leadership, teams, growth modeling, HLM

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ABSTRACT

Leadership has been traditionally conceptualized as individual-centered and top-down. However, the fast growing environment creates demands beyond the capabilities of an individual leader and requires flexible and adaptive leadership structures in response. The current study built upon research in leadership and teams and employed an iterative experimental design to investigate the emergence of shared leadership through its antecedents (i.e., power structure and role assignment) and examine its impact on team outcomes (i.e., productivity, adaptability and innovation). The relationship between shared leadership and other team properties (i.e., collective efficacy and team cohesiveness) were also scrutinized. Social network analysis (SNA) and growth modeling techniques were utilized. Support for hypotheses was not found. Methodological and analytical limitations and future research directions were discussed.

ACKNOWLEDGEMENTS

This work is dedicated to my family, especially my mother, Xiaoling He, who has been there for me every step of the way and whose endless love continues to be the greatest inspiration in my life. The gentle yet steadfast support and encouragement from my family have been the greatest source of my strength. There's nothing more I could ask for.

I give my greatest thanks to my advisor, Dr. Roseanne Foti, for sharing my passion in this research, allowing me to freely explore my interests and helping me shape my ideas from start to finish. During our countless hours of discussions and many rounds of manuscript revisions, she has generously shared her profound knowledge and expertise with me and patiently guided me through the entire process.

I also thank the contributions from the other two committee members: Dr. Neil Hauenstein, who always challenged me and pushed me to think further and beyond; and Dr. Matthew Fritz, who showed me how to be a better scientific writer with his meticulousness and rigor.

My gratitude also goes to the EIGER project at Virginia Tech (an NSF IGERT) and everyone involved, both faculty and students, for inspiring my thoughts and interests on shared leadership, giving me the opportunity to pursue the research in the area and supporting me through it. My gratitude extends far beyond this particular project.

I received a lot of help from numerous people in the process of making this project happen. Specifically, I thank my research assistants, Frances Dear, Catherine

Neal and Robert Palms, among others, whose work and hours invested in the lab were

crucial in the data collection.

Last but not least, I want to give a special thanks to my partner, Dr. Patrick

Hyland, whose love and friendship carried through times of stress and frustration and

fueled me through the finish line. Words could not begin to describe my appreciation.

The completion of this paper marks a small new starting point for me. Looking

back, I cannot help but think of all the people who have touched my life and believed

in me for all the times I have failed to myself. There are more than I could name

here—the list goes on. This was just a small step in a long journey, nonetheless one I

could not have taken on my own. It is with the help of all my family and friends that I

get to see, for every step I have taken, there are so many more ahead. For that, I am

eternally grateful and deeply humbled.

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Introduction

The term "leader" has traditionally been conceptualized as an individual asserting influence on others (i.e., followers). Research on leadership hence has historically focused on leader characteristics and the leader-follower relationship, with the direction of influence mostly top-down (Conger & Kanungo, 1998). The current dominant leadership theories (e.g., transactional-transformational leadership theory) have also been developed under this vertical leadership paradigm (Cox, Pearce, Sims, Murphy, & Riggio, 2003).

The vertical conceptualization of leadership, although having guided a well-established body of literature in leadership research, is becoming increasingly insufficient in explaining organizational structures and leadership behaviors today. First, the leader and follower roles are context-dependent because a person may be the leader in one dyad and the follower in another. However, in any defined dyad, the leader and the follower display distinct behaviors and thought processes, and their assigned roles are not interchangeable. Therefore, the existing framework does not capture the dynamics of leadership. Second, the fast growing environment in the information age creates demands of unprecedented complexity that are beyond the capabilities of an individual leader and requires flexible and adaptive leadership structures in response. Finally, the need for team-based practices in organizations is growing rapidly (Bligh, Pearce, & Kohles, 2006; Kozlowski & Ilgen, 2006). For

example, in corporations, cross-trained top management teams and executive boards are becoming popular; in the military, U.S. Joint Forces Command (USJFCOM) seeks to integrate all services and increase interoperatability; and in academia, interdisciplinary research teams are assembled to solve complicated problems. The emergence of leadership teams in the real world calls for new theories that break through the long-standing individual-centered leadership frameworks and incorporate new structures.

In search of a new leadership paradigm that corresponds to this shift in leadership practices, researchers attempt to identify and apply the also well-established body of teams literature, which places focal importance on the dynamic, emergent and adaptive properties of teams. As Kozlowski and Ilgen (2006) state in their recent review of the teams literature that "teams are complex dynamic systems that exist in a context, develop as members interact over time, and evolve and adapt as situational demands unfold (p. 78)", directly addressing the aforementioned shortcomings of the vertical leadership framework in explaining team-based leadership behaviors.

To overcome the limitations of explaining collective forms of leadership with traditional leadership theories, a hybrid model bridging both leadership and teamwork is required. There exist two distinct patterns in the integration of the leadership and teams literatures. Day, Gronn and Salas (2006) highlight the conceptual distinction between the leader *of* the team and the leader *in* the team. Leadership *of* the team refers to an individual leader, appointed or emerging, influencing other team members to achieve team outcomes. This type of team leadership is a direct application of the

vertical leadership structure and therefore may not be collective. Research in team

leadership has largely focused on leadership *of* the team and has shown that teams can

be effective with the leadership of an individual, who provides functional needs of the

team at a particular time (Burke, Stagl, Klein et al., 2006; Kozlowski et al., 1996;

Zaccaro, Rittman, & Marks, 2001). This body of literature, however, does not explain

leadership *in* the team, which refers to the possibility of leadership functions within

multiple people. The collective nature of leadership *in* teams requires more than

applying vertical leadership theories to the team context. It calls for a new conceptual

framework that incorporates the essence of both teams and leadership.

   The current study aims to contribute to the literature by furthering the

understanding of leadership *in* teams both theoretically and empirically. First, it builds

upon and incorporates extant research in various domains, mainly those of leadership

and teams, and aims to create a unified framework of shared leadership that is

empirically testable. In particular, it conceptualizes shared leadership as an emergent

state and focuses on team-level constructs that are antecedents to the construct and

ensuing team outcomes. Second, the current study attempts to fill some of the existing

gaps between theoretical propositions and empirical evidence in the field of shared

leadership. Specifically, it employs experimental methods to examine the emergence

of shared leadership through multiple performance cycles. By engaging teams in tasks

that simulate a real-world situation in a controlled environment over a period of time,

the current study design has built in multiple performance cycles and iterative

feedback processes. Measurements are taken at multiple time points to closely

monitor the team development process and emergence of shared leadership.

It is important to note a caveat, however. In accordance with present views in the literature, the purpose of the current endeavor is not to argue for the universal superiority of shared leadership over its individual counterparts, but rather to provide evidence on the contextual bases of shared leadership (Cox et al., 2003). The goal is to examine if and how different constructs fuel the emergence of shared leadership and to demonstrate how these questions can be answered empirically using the appropriate level of analysis. However, it does not make predictions about the probability or value of shared leadership beyond the boundary conditions currently tested. In a different situation or with different outcomes in prospect, shared leadership may not be the optimal leadership structure.

Conceptual Foundations of Shared Leadership

Research on shared leadership can be traced back as early as Bowers and Seashore's (1966) notion of peer leadership in work teams. Over the next few decades, this topic received continuing attention, especially in the theoretical domain, as an alternative to the traditional top-down leadership structure. Despite the burgeoning interest in this arena, there is little consensus on a consistent definition and operationalization of shared leadership. Research initiatives related to shared leadership has surfaced in a variety of conceptualizations, including connective leadership (Lipman-Blumen, 1992), distributed leadership (Spillane, 2006), co-leadership, collective leadership (Denis, Lamothe, & Langley, 2001), democratic leadership, delegated leadership and dispersed leadership (Woods, Bennett, Harvey, &

Wise, 2004) among others. The lack of conceptual agreement is in part due to the fact

that these early attempts to understand this relatively novel area of leadership were

developed simultaneously and independently (Pearce & Conger, 2003).

To step beyond this point and move forward with further scientific inquiry on this

topic, it is both plausible and necessary to overlook the nuances in different uses of

language and terminology, and compile the existing theoretical variations of shared

leadership into a comprehensive definition. For example, Spillane (2006) specifically

argues that distributed leadership is qualitatively distinct from shared leadership,

collaborative leadership and co-leadership in that distributed leadership puts an

emphasis on the collective interactions among leaders, followers and the situation.

However, the effects of followers and the situation are not altogether omitted from the

shared leadership literature. First, Spillane uses the term follower "to distinguish those

in leader roles from others involved in a leadership routine" (p. 17), but it is unclear to

what extent a follower who is "involved in a leadership routine" becomes influential

enough to achieve leadership status. For instance, Spillane compares the influence

network in literacy to that in mathematics, and concludes that followers in the

literacy-related network are more involved in discussions than their counterparts in

mathematics. In this case, the literacy followers are involved "in a leadership routine",

but not "in leadership roles", whereas the math followers are in neither.

From a shared leadership standpoint, however, anyone who influences others in

the group process is providing leadership (Seers, Beyerlein, Johnson, & Beyerlein,

1996), which means followers in the literacy-related influence network, based on their

active participation in the decision-making process, would have become part of the

shared leadership network, whereas followers in mathematics-related leadership

routines remain followers. Second, as briefly mentioned before, shared leadership is

context-dependent. Spillane identifies interdependence in routines as one of the

situational elements integral to distributed leadership, which coincides with task

interdependence being one of the characteristics facilitating shared leadership (Cox et

al., 2003).

The case illustrated above is an extreme example where concepts that are

separable on the surface become more similar than different when closely examined.

In many other cases, researchers neglect the subtle differences and use different terms

interchangeably (Denis et al., 2001; Pearce & Manz, 2005). Therefore, rather than

dwelling on any particular version of shared leadership, the definition should focus on

its gist (Day et al., 2006). The most rudimentary understanding of shared leadership is

self-explanatory as suggested by the term itself: The team as a whole shares

leadership. It is a team property because team members in aggregate exhibit

leadership and fully engage in leader behaviors (Ensley, Pearson, & Pearce, 2003;

Katzenbach, 1997). This definition, although straightforward, does not offer much

descriptive or explanatory value. A more in-depth definition is necessary to further

understand the emergence of shared leadership and how it operates. Pearce and

Conger (2003) define it as "a dynamic, interactive influence process among

individuals in groups for which the objective is to lead one another to the achievement

of group or organizational goals or both" (p. 1).

This definition is superior to the simplified version aforementioned because it highlights three key features of shared leadership. First, it is "dynamic", which explains that the structure of shared leadership is fluid and responsive to the external situation. Researchers have pointed to the importance of informal leaders, who rise to the occasion and enact leadership as their roles and responsibilities are demanded by the situation (Neubert, 1999; Neubert & Taggar, 2004). Second, it is an "interactive influence process", which explains the collaborative nature of exchange occurring within the internal structure of shared leadership. In other words, it explains how shared leadership emerges. Third, there is a shared collective goal, which serves as both the purpose and outcome of shared leadership.

Fletcher and Käufer (2003) identify a slightly different set of characteristics of shared leadership: It is distributed and interdependent, embedded in social interaction, and intertwined with learning. The first two characteristics directly correspond to Pearce and Conger's notion of shared leadership as an "interactive influence process", which precisely pinpoint the essence of shared leadership as a context-based collective network of influences and team process (Mehra, Smith, Dixon, & Robertson, 2006) that is "simultaneous, ongoing and mutual" (Pearce, 2004, p.48) . The last characteristic alludes to the cognitive basis of shared leadership, the importance of which is also widely acknowledged in the literature. The emergence of shared leadership requires team members to acquire a shared perspective and to learn to assume responsibility for the collective roles (Avolio et al., 1996; Lipman-Blumen, 1992; Lord, Engle, Beyerlein, Johnson, & Beyerlein, 1996). Day, Gronn and Salas

(2004) hypothesize that team learning, as an ongoing process of shared experience of the team members that changes the team's collective knowledge and skills, will increase the sharedness, distributedness and connectivity of team leadership capacity. James, Mann and Creasy (2007) further explore the role of peer learning, deeming that a systematic learning model congruent with a collaborative mode of thinking is central in the development of distributed leadership.

Woods, Bennett, Harvey and Wise (2004) conducted a systematic literature review and found three "distinctive characteristics" converging on the topic: emergent property, openness of boundaries and leadership according to expertise. These characteristics reside in the idea of "concertive action", which depicts distributed leadership as a holistic phenomenon where individual acts, functions, roles, capabilities and perspectives pooled together exceed their sum (Gronn, 2002). This approach sheds light on the conceptualization of shared leadership as an emergent state predicted to develop over the life of the team.

The conceptualization of shared leadership as an emergent state, however, is not apparent in the literature. To answer the question whether shared leadership is an emergent state, it is important to first understand what emergent states are. Marks, Mathieu and Zaccaro (2001) define emergent states as "constructs that characterize properties of the team that are typically dynamic in nature and vary as a function of team context, inputs, processes, and outcomes" (p.357). The authors consider emergent states being characterized as team-level cognitive, motivational and affective states. They further clarify the important distinction between team processes

and emergent states being that emergent states do not describe the nature of team member interaction.

On the surface, shared leadership cannot be an emergent state based on the above clarification because it is defined as an interactive influence process. This position is implicitly supported by the conceptual model of team adaptation proposed by Burke, Stagl, Salas, Pierce and Kendall (2006) where leadership is included as part of coordination, which is conceptualized as a process during plan execution and leads to the emergent states of shared mental models, team situation awareness and psychological safety. It is important, however, to note the caveat that the authors were mostly referring to leadership of the team and only mentioned shared leadership as "a slightly different tack" (p.1196). The inference of shared leadership as a team process here is therefore indirect.

Upon a closer inspection of its definition, however, shared leadership is not characterized merely by interactions but a network of influence, which is a collective property beyond team processes. The misfit of shared leadership as a team process becomes more evident when reviewing the taxonomy of team processes proposed by Marks et al. (2001). Shared leadership does not simply fall under any of the three process dimensions (i.e., transition, action and interpersonal) but rather may be a result of a combination of these processes and hence should be conceptualized as an emergent state. This idea is also consistent with the proposition of shared leadership as the outcome of other teamwork processes, such as team learning (Day et al., 2004). Therefore, for the current paper, shared leadership is conceptualized as an emergent

state.

Shared Leadership versus Other Related Concepts

To define a construct and advance the understanding of it, one should approach

the topic not only by scrutinizing conceptual variations of the same construct for

common themes, but also by comparing and contrasting it with constructs that are

closely related but conceptually distinct. In the conceptual domain of shared

leadership, associated yet analytically separable constructs worth noting include

vertical leadership, team leadership and teamwork in general.

The relationship between shared leadership and vertical leadership has been

documented in the literature (Pearce & Sims, 2002). The major conceptual distinction

separating the two constructs resides in the direction of leadership influence, usually

characterized by the power structure. With vertical leadership, as indicated by the

term, it is mostly top-down in a hierarchical structure with the leader on top. There

exist differences in power and status between leaders and followers. Shared leadership,

on the other hand, prompts lateral influence, which is dynamic and interactive among

individuals in the group, as previously elucidated. The power structure is relatively

"flat", with less difference in power and status across members. Many researchers

refer to this departure from vertical leadership as a fundamental factor in defining

shared leadership (Pearce & Conger, 2003). Some have also alluded to the difference

in the process of leadership enactment—formal appointment is usually associated

with vertical leadership, whereas informal leaders play an important role in shared

leadership (Pearce, Conger, & Locke, 2007).

Few empirical studies have been conducted to date to explicate the relationship between shared leadership and vertical leadership with the exceptions of the works by Pearce and colleagues. Pearce and Sims (2002) studied the effect of various types of leadership behavior and strategy in change management teams (CMTs) and found shared leadership to be a significant predictor of team effectiveness, explaining more variance than vertical leadership. Similar results were replicated in a different study sampling new venture top management teams (Ensley, Hmieleski, & Pearce, 2006). Shared leadership was found to account for additional variance in new venture performance after controlling for vertical leadership.

While the above preliminary evidence seemingly sheds light on the superiority of shared leadership over vertical leadership, it is important to note two stipulations associated with these findings. First, it is bounded by contexts (Cox et al., 2003). Brown and Gioia (2002) analyzed qualitative data collected from top management leaders of a newly launched Internet unit at a large company and found two contextual themes, speed/pace of the work and ambiguity/complexity of the environment, giving rise to shared leadership.

Second, the relationship between shared leadership and vertical leadership is complicated, as the two can be coexisting. There have been minor controversies on this issue in the literature (Pearce et al., 2007). Locke (2003) uses the label "integrated model" (p.272) to delineate the case in which vertical and lateral leadership influences work in conjunction, hinting at their mutual exclusiveness. The majority of others, however, consider shared leadership a phenomenon of emergent lateral leadership

influence regardless of the existence of formal leadership (Pearce & Manz, 2005). It is

theoretically possible, nevertheless, that these two views are two sides of the same

coin, representing two possible outcomes of the interplay between vertical leadership

and shared leadership. With a formal leadership structure in place, shared leadership

may be developed either to replace insufficient vertical leadership or to provide

support to the appointed leadership. In other words, the relationship between shared

leadership and vertical leadership is contextually dependent on the situation of the

team (e.g., the effectiveness of the appointed leader, the line of work, the goals and

projected outcomes). Shared leadership may not always be the best solution to

maximize team outcomes.

The distinction between team leadership and shared leadership parallels that

between vertical and shared leadership through the categorization of leadership *of* the

team and leadership *in* the team. For example, Salas, Rosen, Burke and Goodwin

(2008), in a recent review of the teamwork literature, without using these exact terms,

acknowledge this distinction by introducing shared leadership as an alternative to "the

functional approach to leadership" which has been "a dominant perspective" of team

leadership (p.43).

Team leadership (i.e., leadership *of* the team), comparable to vertical leadership,

is defined by the individual leader's "ability to direct and coordinate the activities of

other team members, assess team performance, assign tasks, develop team knowledge,

skills and abilities, motivate team members, plan and organize, and establish a

positive atmosphere" (Salas, Sims, & Burke, 2005). Shared leadership (i.e., leadership

in the team), in contrast, focuses on the "transference of the leadership function among team members in order to take advantage of member strengths as directed by either environmental demands or the development stage of the team" (Burke, Fiore, & Salas, 2003). The effectiveness of shared leadership therefore resides in team members' ability to recognize each others' individual expertise on-demand and shift responsibilities in response to dynamic task environments.

Shared leadership, unlike vertical leadership, cannot exist independent of the team because the "shared" component is defined by collateral interaction and influence. While top-down leadership influence can be exerted at any level (e.g., team, organizational, national) as long as there are followers, shared leadership can only be delivered in the team. The comparison between shared leadership and team leadership therefore should also be viewed within the larger conceptual space of teamwork.

The conceptualization of teamwork can be better understood using the classic Input-Process-Output (I-P-O) structure, the development of which should be credited to the influential works by Steiner (1972), McGrath (1984) and Hackman (1987). I-P-O models describe the lifecycle of a team as a linear system as a function of time, in which inputs (e.g., contexts) lead to the production of outputs (e.g., team performance outcomes) through team processes. This framework has provided the basis for, and guided the direction of, empirical research in the teamwork literature in recent years. However, the advanced conceptual understanding of the team and its complexity has also presented challenges to the sufficiency and utility of the I-P-O framework.

Ilgen, Hollenbeck, Johnson and Jundt (2005) proposed a shift to the

Input-Mediator-Output-Input (IMOI) framework in response to some of the criticisms

of the I-P-O framework. First, the IMOI framework is expanded to include factors

other than team processes that influence outcomes, namely, emergent states. As

mentioned before, Marks et al. (2001) distinguish between team processes and

emergent states: The former focus on the nature of interactions between team

members, whereas the latter represent dynamic team qualities, such as attitudes,

values, motivations and cognitions. Second, the new framework explicitly addresses

the issue of feedback by adding a link from the output back to the input. Hackman

(1987) emphasizes the importance of opportunities for feedback in team development.

However, the linear approach of the I-P-O model fails to capture this retrospective

influence. The IMOI features a built-in feedback loop, through which current outputs

are recycled to inform and influence future inputs. Third, the IMOI model does not

place any constraints on the nature of the relationships between variables. The

traditional I-P-O model implies only main effects proceeding from inputs to team

processes, and then team processes to outputs, which limits the exploration of

variables whose effects are conditional. The IMOI model, while maintaining the

temporal basis of the causal relationships, also allows for the interactions between

variables.

The study of teamwork, under the I-P-O and IMOI frameworks, is largely focused

on mechanisms underlying the accomplishment of team goals and performance

outcomes. Salas et al. (2008) define teamwork as the process of enacting

competencies that enable members to function interdependently. Expanded from the

original "big five" of teamwork (Salas et al., 2005), consisting of team leadership (i.e.,

leadership of the team), mutual performance monitoring, backup behavior,

adaptability and team orientation, the revised team competencies encompass a

comprehensive list of team attitudes, behaviors and cognitions, including shared

leadership as one of the behaviors.

Day, Gronn and Salas (2004) proposed an IMOI model centered around

team-level leadership, in which teamwork serves as a foundation for the emergence of

shared leadership. Complimentary to the traditional view of team leadership as the

concentrated fulfillment of leadership roles and functions, typically conceptualized as

an external influence (e.g., leadership characteristics) and input to the team system,

the authors proposed leadership also being the outcome in a cyclic system of

teamwork. In this framework, leadership capacity, defined as the sharedness,

distributeness, and connectivity of leadership, is created and enhanced through

teamwork, such as the "big five", as well as other team competencies, including team

learning.

This conceptual framework of shared leadership affords several advantages

directly pertinent to the current study. First, defining shared leadership through a

cyclic relationship using the IMOI model is consistent with its conceptualization as an

emergent state. Second, the immediate connection between shared leadership and

teamwork is consistent with its conceptualization as a team-level property (i.e., as

opposed to individual characteristics and leadership functions). Lastly, and most

importantly, under this framework, the connection between shared leadership and teamwork can be empirically tested.

Methodological Issues Related to Shared Leadership

The advancement in shared leadership theories is to a certain extent impeded by the lack of pertinent empirical evidence, leaving many theoretical propositions untested. The most serious challenge is methodological, residing in the operational definition and measurement of shared leadership. There are two major different operational definitions of shared leadership, represented by two distinct measurement methods, in the existing literature.

The first approach builds upon established leadership assessment methods and uses traditional psychometrics to measure shared leadership. The underlying theoretical assumption is that shared leadership is an aggregated action of leadership, in which multiple people exhibit the same leader behaviors contemporaneously as a single individual would in the leadership position (House & Aditya, 1997). Therefore, existing leadership theories can be extended to teams, and the same standards used to evaluate an individual leader can be escalated to the group level to measure shared leadership. Based on the transformational leadership theory, Avolio and colleagues developed a 23-item Team Multifactor Leadership Questionnaire (TMLQ) to assess shared leadership, using the group as the rater referent (Avolio et al., 1996; Avolio, Sivasubramaniam, Murry, Jung, & Garger, 2003). In a few validation studies using independent samples, they found evidence to support a five-factor structure, including the dimensions of inspiring, intellectual stimulation, individualized consideration,

managing-by-exception-active, and passive/avoidant leadership.

Pearce and Sims (2002) employed a similar approach to compare between vertical leadership and shared leadership, using a different typology of aversive leadership, directive leadership, transactional leadership, transformational leadership and empowering leadership (Pearce et al., 2003). The same questions were asked with reference to "my team leader" (to measure vertical leadership) or "my team members" (to measure shared leadership). Hyer, Fairchild, Abraham, Mezey and Fulmer (2000) studied interdisciplinary healthcare teams and developed a set of context-specific questions with reference to the team. They also utilized factor analytic procedures and found shared leadership to be a significant dimension in interdisciplinary teamwork.

The method described above is commonly practiced in shared leadership research and has led to some quantitative empirical evidence on the subject matter. There are several advantages that render this method a viable option. For the most part, it provides convenience in data collection and analyses, enabling large-scale quantitative studies. Once an instrument is developed and validated, it can be used in different studies, which makes it possible to compare results. Although this assessment method stems from the long-standing tradition of survey research in psychology, it is not without problems when used to assess shared leadership.

Whether a measurement instrument is appropriate for the construct in question is largely determined by the extent to which it corresponds with the definition. As previously elaborated, shared leadership is defined as not only the state, but also the process, of members sharing leadership within a team. The team-referent leadership

questionnaire method, through surveying leadership behaviors by the team as a whole,

fails to capture the interactive process, through which leadership is shared. It only

answers the question of *whether* or to what extent, but not *how*, leadership is shared.

Team members' leadership behaviors must be averaged across the team in order to

provide an overall evaluation of the team's leadership. The dynamics of the shared

leadership process are therefore overlooked in these ratings: To constitute a shared

leadership structure, not everyone in the team has to participate in leadership equally

at all times. Two teams with the same scores on a team-referent leadership

questionnaire may have different shared leadership structures. Therefore, to further

capture the complexities of shared leadership, there is need for an alternative

measurement method that transcends beyond the aggregated application of traditional

leadership theories.

Mayo, Meindl and Pastor (2003) proposed the social network approach as a new

methodological perspective in understanding shared leadership. Social network

analysis (SNA) is grounded in the relational assumption that people participating in

social actions are embedded in the interpersonal web where information and influence

are exchanged. Kilduff and Tsai (2003) identify its "focus on relations and patterns of

relations rather than attributes of actors (p.19)" as one of the distinct features of

network research. This theoretical foundation of the social network approach

coincides with the definition of shared leadership as a dynamic distributed influence

process.

In social network analysis, the basic unit of analysis is the connection between

individuals. Groups are represented as a collection of connected points. In the

proposed social network model of shared leadership, the team, team members, and the

influence interactions among team members are represented as the *network, nodes* and

links or *ties*, respectively. The links among team members are measured with strength

(i.e., frequency of influence interactions) and symmetry (i.e., degree to which the

interactions are reciprocal). An individual's position in the network is represented by

network centrality, measured by *degree centrality* (i.e., number of links in the network

possessed by the individual), *closeness centrality* (i.e., the individual's ease of access

to others in the network) and *betweenness centrality* (i.e., number of mediating

relationships by the individual between two unconnected people in the network). The

whole network is then characterized by its *density* (i.e., ratio of the number of existing

links to that of possible ones) and *centralization* (i.e., degree of unequal centralization

in the network).

The social network model of shared leadership can build on any leadership

theories with a component of exchange, which holds true for most existing leadership

theories because leadership by definition is an act of influencing. Even for leadership

theories that focus on individual leader characteristics, the perceptions or attitudes of

the leaders conceived by their followers constitute a process of exchange. For the

purpose of illustrating the properties of this method in comparison to the first

assessment approach elucidated above (i.e., TMLQ), the example used here also

builds upon the transactional-transformation leadership theory and measures

leadership on contingent reward, management by exception, charisma, individualized

consideration and intellectual stimulation. Team members have the opportunities to document each other's behavioral frequencies on those dimensions in relation to themselves. For example, the question for contingent reward is "How often does each member of your team acknowledge and reward you for your contributions to the team?" and the respondent is asked to rate each team member on this question.

Once data are collected, the team networks can be mapped on a sociogram, where individual team members are connected by arrows, representing the interactions among them. Highly decentralized networks are defined as shared leadership structures. The degree of shared leadership is characterized by network density (i.e., the more dense networks display higher degree of shared leadership). In addition, the social network model allows for further analysis of different shared leadership structures. This method also has the advantage of detecting and tracking the emergent and changing structures when used to collect longitudinal data.

Although SNA has advantages as a methodological tool to study shared leadership, it has not yet been commonly practiced in the area. Little relevant empirical evidence can be found with one exception. Mehra and colleagues (2006) used an abbreviated version of this method to study shared leadership in sales teams. Instead of measuring each other's behaviors based on the transactional-transformational leadership theory, team members were simply asked to nominate leaders within the team. If a single individual receives the most nominations, the team would be a centralized network, representing a vertical leadership structure. If everyone receives the same amount of nominations, the team would be a

decentralized network, representing a distributed-coordinated leadership structure. If some people within the team nominate one person while others nominate another person, the team would represent a distributed-fragmented leadership structure. Data were collected in 28 sales teams. Using team sales as the performance outcome measure, the hypothesis that distributed-coordinated leadership structure would outperform the other two (i.e., distributed-fragmented and vertical) was supported. This study sheds light on the understanding of different shared leadership structures and calls for further fine-tuned exploration on the topic, which would be difficult, if not impossible, without social network analysis.

The Present Study

The objective of this study is to understand shared leadership through its antecedents using the IMOI framework, which accommodates the conceptualization of shared leadership as an emergent state. Figure 1 presents the conceptual model underpinning the current experimental effort.

It is important to caution that this particular conceptual model was not constructed to summarize all variables related to the emergence of shared leadership but to target a set of key factors deemed relevant in the literature. This reduction can be achieved through an experimental design that controls the variance of variables that are not of interest at this point but may have an effect on the emergence of shared leadership. In essence, it is relying on theoretical assumptions that should be empirically tested in subsequent studies. For example, as elucidated before, the task context is vital to shared leadership: Certain task characteristics have been proposed

to facilitate its emergence (e.g., novelty, interdependence, complexity). However, the

task variance is controlled to be uniform in the experiment (i.e., everyone is

introduced to the same novel, interdependent and complex task). Therefore, there is

no need to include these task characteristics as variables in the conceptual model.

Nevertheless, their influence on the emergence of shared leadership should not be

overlooked.

Antecedent Variables

Power structure and *role assignment* are included in this model as input variables

that facilitate shared leadership. A team's power structure reflects its members' status

composition in terms of decision-making (e.g., chain of command). For the present

purpose, it is operationally defined as whether a formal leader has been appointed.

Role assignment reveals useful information about each team member's position

within the team and unique responsibilities on the task. It is operationally defined as

the publicizing of job titles assigned to each team member at the forming of the team.

As previously noted, the existence of centralized power may create barriers to the

emergence of shared leadership. A solitary team leader may only facilitate shared

leadership within the team when she or he assumes the role of a facilitator and permits

fluidity of the power structure. Seers, Keller and Wilkerson (2003) provided an

in-depth synthesis of theories or role-making, social exchange and expectation states,

which underline the effect of status and role differentiation on the emergence of

shared influence. Throughout a team's lifecycle, there is iterative interplay among the

initial expectations team members form about each other's status at the initial forming

of the team, their own status-seeking, the role-making process and social exchange. The authors further proposed the dispersion of power and influence within a team as one of the important factors that give rise to shared leadership, especially when team members assume unique and complementary roles.

This is consistent with an empirical study conducted on cross-functional teams in healthcare by Lichtenstein, Alexander, McCarthy and Wells (2004). Results suggest that within-team status differences are likely to suppress low-status team members' participation in decision-making. In the present study, because power structure is operationally defined as a formal leader appointment prior to team interaction, it is likely to introduce status difference into the team at the outset, which in turn would inhibit the emergence of shared leadership by influencing team members' status expectations.

There is also ample evidence on the effect of role differentiation in the social cognitive literature, specifically in reference to the study of the use of shared and unshared information in group processes (Stasser, Stewart, & Wittenbaum, 1995; Stasser, Vaughan, & Stewart, 2000; Stewart, Billings, & Stasser, 1998; Stewart & Stasser, 1995; Wittenbaum & Park, 2001). In summary, the overriding conclusion from research in this topic area suggests that team members overweigh shared information over unshared information in collective decision-making. They give more attention to and spend more time discussing common than unique information during the decision-making process. In addition, they place more weight on shared information than unshared information when making decisions. Finally, team

members view each other more positively the more information they share in common (Wittenbaum & Park, 2001).

The role of unshared information, however, is oftentimes critical in making the right decision and solving the problem, in which case team effectiveness is optimized only when team members can pool and utilize unshared information. Collective decisions based on common information shared among team members may not be superior to those individually made (e.g., if two team members share the exact same information, they may come to the same conclusion whether decisions are made together or separately). However, when team members pool unique information, collectively the decision would be based on more information than individually, augmenting the advantages of group processes in decision-making.

Researchers have discovered and empirically documented that role assignment (i.e., the identification of individual expertise as resources of unique or unshared information) initiates and encourages the pooling of unshared information within a team (Stasser et al., 1995; Stasser et al., 2000; Stewart & Stasser, 1995). Specifically, the discussion of unshared information uniquely held by team members was promoted when expert roles within the team (i.e., responsibilities of who knows what) were pronounced. The effect did not replicate when team members were simply made aware of the availability of unshared information (i.e., forewarning without the attribution of responsibilities of expertise).

The above rationale regarding power structure and role assignment affords the following hypotheses:

Hypothesis 1: Power structure will negatively impact shared leadership. If power difference is high in the team structure, then shared leadership is less likely to emerge over time.

Hypothesis 2: Role assignment will positively impact shared leadership. If role information is available to team members, then shared leadership is more likely to develop over time.

Collective efficacy, as an emergent state, is conceptualized as an output variable whose emergence in turn feeds back to the development of the team continuously as an input variable, as a function of time, throughout the team's life cycle (Tasa, Taggar, & Seijts, 2007). The notion of collective efficacy, a shared belief of a group's capacity for success, initially stems from self-efficacy and develops as its counterpart at the aggregate level (Bandura, 1982). Since then, more fine-grained distinctions between related constructs have been developed. Baker (2001) shows an array of group-level efficacy conceptualizations in the literature that vary on task specificity, type of belief being assessed, method of assessment and level of analysis. For example, some have argued that group potency (e.g., "Our group feels it can solve any problem.") and collective efficacy (e.g., "When unexpected problems arose, I am sure we'll handle them.") are separate constructs that measure different types of beliefs (Avolio et al., 1996). The former refers to team members' collective confidence in the team's general capacity to success and the latter refers to collective perceptions of the team's task-specific ability (Gully, Incalcaterra, Joshi, & Beaubien, 2002). It has also been argued that collective efficacy is an individual-held belief, whereas potency is a

group-held belief (Guzzo, Yost, Campbell, & Shea, 1993). Overall, however, many

researchers view the two constructs as more similar than they are different (Kozlowski

& Ilgen, 2006).

For the purpose of the current study, collective efficacy is conceptualized as team

members' shared perceptions referencing the team as a collective entity, which is

related to but distinct from an aggregated level of self-efficacy across team members

(Gibson, 1999). Bandura (2000) summarize the means of measuring collective

efficacy into two indices: aggregating either members' appraisals of their individual

capabilities to perform their functions in the group or their appraisals of the group's

capability to perform as a whole. Under interdependent task goals, when proficient

teamwork is required to achieve team success, the holistic index of collective efficacy,

which encompasses the interactive and cooperative process within the team, is more

appropriate. Concurrent with the theoretical underpinnings, the shared notion of

collective efficacy used in the present study can only emerge after team members

establish some shared experience over time, hence it is more appropriately measured

with the second method. In addition, the temporal focus of the construct as an

emergent state and the growth trajectory of its influence as a result call for repeated

measurement over time (Kozlowski & Ilgen, 2006).

Meta-analytical findings have demonstrated a strong relationship between

collective efficacy and team performance (correlated r = .41) (Gully et al., 2002), yet

little empirical evidence can be found to link it to shared leadership. The potential

relationship between collective efficacy and shared leadership remains theoretical in

the literature. For example, Burke, Fiore and Salas (2003) made the theoretical

proposition that collective efficacy is positively related to shared leadership.

Kozlowski et al. (1996) also noted the positive effect of collective efficacy, as a

shared attitude, on team coordination and adaptability through the emergence of team

coherence in their proposed theory of team leadership.

Hypothesis 3: Team members' collective efficacy will positively impact shared

leadership. If team collective efficacy is high, then shared leadership is more likely to

develop over time.

In addition to collective efficacy, another team process variable, *team*

cohesiveness, also conceptualized as an emergent state, is included in the model in

conjunction with collective efficacy to separate the effect of shared leadership from

other underlying mechanisms of teamwork. Team cohesiveness, as one of the

important teamwork components, is defined as team members' attraction to each other,

commitment to the task, as well as their desire and pride to be part of the team (Beal,

Cohen, Burke, & McLendon, 2003).

From a conceptual standpoint, as elaborated before, shared leadership is built

upon a teamwork basis. However, shared leadership is also a unique teamwork

behavior distinct from other teamwork competencies (Salas et al., 2008). Therefore,

the impact of shared leadership, as a unique construct, should be empirically

demonstrated by testing for the incremental predictive power of shared leadership

while controlling for the effects of other team processes and emergent states, such as

team cohesiveness.

Hypothesis 4: The emergence of team cohesiveness will positively impact the emergence of shared leadership over time. If team cohesiveness grows, then shared leadership is more likely to develop.

Outcome Variables

The outcome variables in the current conceptual model consist of *productivity*, *adaptability* and *innovation*. Productivity is frequently utilized as a team performance measure, mostly objective (Burke, Stagl, Klein et al., 2006). It has been demonstrated to be a positive outcome of shared leadership in different team settings (Ensley et al., 2006; Perry, Pearce, & Sims, 1999)

Team adaptability and innovation have both been defined in multiple ways. These two constructs are closely related because they both reside in the context of changing environment (Burke, Stagl, Salas et al., 2006). At an advanced level of conceptualization, there may be a complex interplay between adaptability and innovation. For the current purpose, they are conceptualized as separate constructs that serve as team outcomes. Adaptability is defined as a team's self-correcting ability reactive to feedback (Day et al., 2004), and innovation as a team's exploration of new knowledge (Katila & Ahuja, 2002).

Two articles have posed a theoretical connection between shared leadership and team adaptability, although there is no consensus on the direction of causality. Burke et al. (2003) predict shared leadership and team adaptability as team behaviors resulting from the development of shared knowledge structures, while implicitly proposing a reciprocal positive relationship between shared leadership and team

adaptability. Day et al. (2004) conceptualize adaptability as part of teamwork, which serves as a mediating variable between the input of team member resources and the output of shared leadership. However, the specific relationship between adaptability and shared leadership is not addressed.

In the same vein, innovation has seldom been explicitly related to shared leadership in the literature. Rather, there has been some research on innovation and other constructs relevant to shared leadership. For example, based on research on the effect of team collaboration and integration on innovation, many have insinuated a positive relationship between shared leadership and innovation (Kennedy & Schleifer, 2006; Matthew & Sternberg, 2006; Sacramento, Chang, & West, 2006). In addition, West et al. (2003) found team processes, including level of participation, to consistently predict team innovation.

The following hypotheses are inferred from the arguments presented above:

Hypothesis 5: Shared leadership will positively impact the team's productivity. If shared leadership emerges, then the team will be more productive.

Hypothesis 6: Shared leadership will positively impact the team's adaptability. If shared leadership emerges, then the team will be more adaptable.

Hypothesis 7: Shared leadership will positively impact the team's innovation. If shared leadership emerges, then the team will be more innovative.

<div align="center">Method</div>

Participants

One hundred and forty-four undergraduate students enrolled in psychology

courses voluntarily participated in the study for course extra credits after being

screened by the International Personality Item Pool (IPIP) Big-five

Surgency/Extroversion 20-item subscale (see Appendix A). Extraversion has been

found in meta-analyses to be the personality characteristic most strongly correlated

with leadership (Bono & Judge, 2004; Judge, Bono, Ilies, & Gerhardt, 2002). Since

the leadership-related individual difference was not the focus of the current study but

could be a confounding variable, the screening procedure was employed as an attempt

to control for unwanted variance in individual leadership. To maximize the effects of

experimental manipulations, extreme scores were eliminated—only those who scored

within one standard deviation from the mean on the screening measure were invited to

participate in lab sessions

     Thirty-six four-person teams were composed of two male students and two

female students each, controlling for the potential bias due to gender imbalance. Upon

the completion of the study, trained raters coded whether all participants in each team

fully engaged in the task to screen for contaminated data—no team was excluded on

this basis. Two teams were removed due to missing self-reported data, and the

remaining thirty-four teams were included in the subsequent analyses.

Materials

     The Tinsel Town simulation (Devine, Habig, Martin, Bott, & Grayson, 2004) was

used in a lab setting (See Appendix B). This task was chosen for three reasons. First, it

fits the current theoretical framework because it is novel, interdependent and complex.

Second, the success on the task mostly depends on the interactive process through

which team members share unique information assigned to each of them, which highlights the need for shared leadership structure. Third, the task has some degree of malleability, allowing for experimental manipulations.

In the Tinsel Town simulation, each group plays the top management team of a fictitious movie studio in Hollywood, consisting of vice presidents from four distinct functional areas: Marketing, Industry Research, Script Evaluation and Talent Appraisal. Each one of the four members is assigned a piece of unique information pertaining to her or his role in the team. Given a limited budget, the team is tasked with choosing a number of screenplays and deciding the marketing level for each movie every year for three years—they receive a different set of screenplays to choose from and different associated information each year. However, the team's task and team members' roles remain the same throughout the entire simulation period. The goal is to maximize profit with the movies they choose by utilizing relevant information available to them. At the end of each decision period (i.e., year), they receive feedback on their performance—they are provided with dollar figures associated with the profit they generated with the movies they have chosen, as well as how their profit compares to the optimal solution (i.e., how much money they could have made), so they can analyze and interpret their decisions and use the information for the next performance period.

Manipulations

Power structure. Power structure was manipulated as the formal leader appointment at the inception of the team. Half of the teams, randomly selected,

received no leader appointment. For the other half of the teams, one of the team members was appointed to be the formal leader using a fictitious screening procedure at the beginning of the experimental session—they were led to believe the selection was based on pre-task measures of individual characteristics, but in reality and leader was randomly selected by the research assistant.

In addition, the manipulation was maintained throughout the task in the form of signatures. All teams were required to submit their decisions in writing at the end of each decision period and signatures were obtained to symbolize the responsibility of final decision-making. In the no leader appointment condition, signatures of all four team members were required; in the formal leader appointment condition, only the designated leader was required to sign the form.

Because all teams were composed of two females and two males, to counterbalance the possible confounding effect of gender, half of the teams in the formal leader appointment condition were appointed with a male leader and the other half a female leader. Upon data collection, the mean differences by gender on all observed variables were tested with a one-way Analysis of Variance (ANOVA) with leader gender as the independent variable, broken down by each performance cycle. Out of the 17 variables (a complete list can be found in Table 1), only two variables showed statistically significant differences by gender: for observer ratings of shared leadership during the last performance cycle, $F(1, 15) = 8.25$, $p < .05$, and for team cohesiveness during the second and third performance cycles, $F(1, 15) = 6.63$, $p < .05$ and $F(1, 15) = 7.08$, $p < .05$, respectively. Therefore, there is little evidence of

systematic bias due to the gender of the leader and the use of groups with both male

and female appointed leaders in the same analysis is justified.

Role assignment. All teams were given the same role information (i.e., there was

no difference between the two conditions in terms of the actual task information

participants received regarding their roles). Half of the teams were made aware of the

fact that each team member assumes a unique role and possesses relevant unique

information when the research assistant read aloud the task instructions (i.e., role

assignment condition). This piece of information was withheld from the other half of

the teams (i.e., no role assignment condition). In addition, team members in the role

assignment condition received place cards on the table with job titles to identify their

areas of expertise, whereas those in the no role assignment condition were identified

by numbers. In addition, to balance potentially confounding effect of leader-role

interaction, the leader appointments were evenly distributed across all four roles (i.e.,

each role was represented in the leader appointment condition).

Measures

Collective efficacy. The 9-item measure of collective efficacy (see Appendix C)

developed by Tasa et al. (2007) was used. The scale aims to assess both the magnitude

and strength of team members' confidence in the team's ability to progressively

achieve higher performance levels, defined by placement among teams participating

in the simulation. Each item represents a different percentile ranging from 5 to 45 and

separated by an increment of 5 (e.g., "I believe our team can finish the simulation in at

least the top 10 teams"). For each performance level, participants were asked to

respond "yes" or "no" and also estimate the confidence in their answer on a

continuous 100-point scale (0 = "no confidence at all", and 100 = "complete

confidence"). The magnitude of collective efficacy is operationally defined as the total

number of "yes" answers and strength as the sum of certainty scores across items with

"yes" answers. The magnitude and strength of collective efficacy are conceptualized

as separate but correlated components. The correlations between these two

dimensions across three performance cycles were .76 ($p < .01$), .88 ($p < .01$) and .83

($p < .01$), respectively. Given the sizable correlations between the two components,

for the purpose of the present study, only scores of magnitude were used as the

measurement of collective efficacy.

   Team cohesiveness. One item (see Appendix D) was selected and adapted from

the five-item index of workgroup cohesiveness in Seashore (1977) to measure team

cohesiveness in this study. The five items in the original scales contained items with

two different referents: the first two items refer to the individual (i.e., items focus on

how "I" relate to the team) and the last three items refer to the team (i.e., items focus

on how "the team" relates). Only the first two items were consistent with the

definition of team cohesiveness, which focuses on team members' individual attitudes

(e.g., pride, commitment, attraction), as discussed earlier. Of these two

individual-referent items, one measures the individual team members' feeling of

belonging to the team on a four-point Likert scale and the other measures the

individual team members' willingness to stay with the team on a five-point Likert

scale. The first item was a closer representation of the definition and therefore used as

the measure of team cohesiveness in the current study. The wording of the item was slightly modified to fit the context (e.g., "part of your work group" was changed to "part of your team") and the responses were reverse-coded.

Shared leadership. Using the SNA-based approach by Mehra et al. (2006), participants were provided with a list of their team members and asked to check those they perceived as a leader, as shown in Appendix E. Each team member was asked to nominate leaders within the team in response to the question "Who do you see as the leader(s) of your team? Check all that apply." Data from all members were aggregated with SNA to produce a network total for each team that reflected the level of leadership sharedness in the team.

In addition, observer ratings were used as an independent measure of shared leadership. All three discussion periods of each team were coded either live or on video by three trained research assistants using a behavior checklist (see Appendix F). Based on the behavior checklist, the observers made a global judgment of the leadership structure for each performance period. The ratings range from 1 to 4, representing the number of leaders in a team. All observers attended a training session, during which they rated the same video segments and discussed their ratings afterwards to reconcile any inconsistencies in perception. They were then each assigned a number of experimental sessions, for which they subsequently performed the rating tasks independently. The author also provided reliability ratings as a second rater on half of the sessions (i.e., 18 teams) at each time point. In cases of disagreement, the author's ratings were used.

Productivity and adaptability. Productivity and adaptability are measures

inherently built in the simulation. Based on the algorithms by the developers, both

productivity and adaptability are objective measures calculated by dollar amounts. For

each screenplay at each marketing level, there is an associated profit (i.e., the

difference between revenue and cost) in the scoring key. Each decision can then be

scored as how much profit the team has generated with the movies they chose in a

given performance cycle. Productivity was scored as the percentage ratio of this profit

to the maximum profit based on the optimal solution. For example, if a team

generated a profit of 100 million dollars with the movies it picked and the maximum

profit possible for this performance cycle is 200 million dollars, productivity would be

50 percent. Adaptability was subsequently scored as the difference in productivity

between two performance cycles—if the same team scored 70 percent in the next

performance cycle, adaptability would be 20 percent.

Innovation. The assessment of innovation was adopted from Marinova's (2004)

study on market knowledge diffusion, which measured each team's innovation effort

by the amount of money it invests in product R&D. For the present study, at each

decision period, every team was offered the opportunity to budget an investment into

R&D by answering the question "Hypothetically, if your team is given an additional

50 million dollars this year, how much would you invest that money into R&D?" A

team's answer to this question—a number ranging from 0 to 50 representing a dollar

amount in the millions—was then used directly as the measure of innovation.

Procedures

Upon arrival to the lab, participants received the consent form (see Appendix G). The research assistant also verbally reminded them that the experimental process would be video recorded. Once all signatures were obtained, pre-task measures, consisting of questions pertaining to team members' personality characteristics and general self-efficacy, were distributed. These measures were not included in the actual analyses but merely used to increase the credibility of the experimental manipulation of leader appointment. The research assistant collected the measures upon completion, left the room, and returned shortly after. Participants were then randomly assigned to gender-balanced groups (i.e., each group composed of two females and two males), either with or without an appointed leader. In the leader appointment condition, team members were led to believe that a team leader was appointed based on the results of the pre-task measures. In the no leader appointment condition, participants received no such instructions.

After the team was convened, the research assistant read aloud the scripted instructions for the simulation and then distributed folders with Year 1 information. The role assignment manipulation was embedded in the setting (i.e., participants were either seated at a table with their role titles written on place cards in the role assignment condition or only numbers in the no role assignment condition), the instructions (i.e., the research assistant read aloud the participants' job titles in the role assignment condition and the line was omitted in the no role assignment condition), as well as the reading materials. In the role assignment condition, all participants

received a general memo addressed to four different titles of vice-presidents noting each member's specific role; in the no role assignment condition, the memo was addressed to "all vice-presidents" (see Appendix B).

Participants were first given 15 minutes to review the materials independently. Then the research assistant returned to the room to initiate a 25-minute discussion period, followed by the completion and collection of the Final Recommendation Sheet. A questionnaire packet containing measures of collective efficacy and team cohesiveness was then distributed. While participants were filling out these questionnaires corresponding to Year 1, the research assistant scored the Final Recommendation Sheet (see Appendix B) and filled out the feedback form (i.e., Revenue and Profit Sheet, included in Appendix B). After the completed questionnaires were collected, participants were provided with the feedback form and instructed to review the results among the group and deliberate for five minutes.

The folders for Year 2 were then distributed and the above process was repeated. Measures of collective efficacy and team cohesiveness were collected for the second time after the end of Year 2. After feedback on Year 2 performance, the cycle was again repeated for Year 3. At the end of Year 3, participants also received the measure of shared leadership after they received feedback on their Year 3 performance. Upon the completion of the shared leadership measure, a 15-minute debriefing session was held, during which the group discussed and reflected on the experience. Finally, participants were thanked for their participation and provided with relevant contact information from the consent form.

Results

Data Aggregation

Two variables, collective efficacy and team cohesiveness, were measured at the individual level but needed to be analyzed at the group-level, and therefore required statistical aggregation. Aggregated team scores on these two variables were computed as mean scores of individual ratings from team members.

Collective efficacy is conceptualized at the team-level (i.e., collective beliefs of team's ability) but measured at the individual-level. To justify the aggregation of individual ratings to the group-level in accordance with Tasa et al. (2007), which used a direct consensus model (Chan, 1998) for aggregation, intra-class correlations (ICCs) were computed. As suggested by Bliese (2000), both ICC(1) and ICC(2) were calculated to estimate the extent to which the variance on this variable can be accounted for by group memberships as opposed to individual factors. For ICC(1), positive values are acceptable and .2 is considered high (Bliese, 2000). For ICC(2), a high value would be .6 (Glick, 1985). The average ICC(1) and ICC(2) coefficients for collective efficacy across three performance cycles were .18 and .46 respectively, which were deemed close enough to the above standards to justify team-level aggregation of this variable.

Team cohesiveness is both conceptualized and measured at the individual-level. Therefore, the additive model, or a compilation model, was used to aggregate the scores from individual-level to team-level (Chan, 1998; LeBreton & Senter, 2008). In this aggregation model, because what is being rated is different for each rater (i.e.,

team member were each rating themselves only), agreement or reliability does not

apply (Bliese, 2000).

Social Network Analysis (SNA)

The self-reported shared leadership scores were computed using SNA. As

previously elaborated, networks (i.e., in this case, each team would be its own

network) are characterized with two measures, density and centralization. With team

members' ratings of each other regarding the team's leadership structure, the degree of

shared leadership can be captured using the measures of network density (i.e., ratio of

the number of existing links to that of possible ones) and centralization (i.e., degree of

unequal centralization in the network).

SNA is a visual analytic technique designed to measure the nature and amount of

interactive activities within a defined network, therefore the basic unit in SNA is a

link or tie between two actors (i.e., represented as nodes on a sociogram)—in this case,

each rating a team member gives another team member represents a unique tie. Social

network data are typically structured as square matrices because in a network when all

actors share the same possibility of interacting with each other, there should an equal

number of actors potentially interacting with others and also potentially being

interacted with. In the present study, because all teams are composed of four members,

network data from each team form a 4X4 matrix.

The calculation of network density and centralization is based on each matrix.

Density, generally computed as a ratio, in this particular case can be simplified as the

count of total ties in the network without changing its meaning because all measures

share the same denominator (i.e., since the network size is the same across all teams, the maximum number of ties is the same for all). In this case, straightforwardly, each tie represents a degree of leadership influence one actor has on another.

The computation of network centralization is based on the variability in influence across the actors in a network—in essence, the extent a network is dependent on one person, in this case, for leadership. In the most extreme case, when one single actor possesses all the influence (i.e., one person would be connected to everyone else in the network while no one else is connected with each other), the network is said to have the maximum centralization because the positional advantages this person has over everyone else reach the highest potential. The structure of any given network can then be compared to the maximum centralization possible of a same-size network, and centralization would be expressed as the degree of variability in influence (i.e., sum of differences in number of ties) among the actors as a percentage of its theoretical maximum. For this study, the computation of network centralization is conducted through the SNA software UCINET 6 (Borgatti Borgatti, Everett, & Freeman, 2002).

To illustrate the calculation of these two network measures, data from two teams with different leadership structures are shown in Figure 2. In response to the question "Who do you see as the leader of your team", team members were prompted to nominate any members, including themselves, they perceived as assuming leadership during the task—it is important to note that self-ratings are permitted and included in the computation (i.e., the data matrix may include non-zero diagonals), which renders greater-than-100% centralization possible because the "ghost ties" within the self

cannot be visually represented in a network sociogram and therefore is not counted in

the maximum degree that serves as the denominator of the measure.

The corresponding sociograms for the two teams are also shown in Figure 2 with

each arrow representing a unique tie (i.e., a double-ended arrow would represent two

ties). As seen in the data matrices, in team one, all members unanimously nominated

team member A as the single leader; in team two, all members rated each other as

leaders. The density is therefore 4 for team one and 16 for team two (as seen in Figure

2, the sociograms only show 3 ties for team one and 12 for team two). Centralization

is 133% for team one (i.e., ratio of 12 to 9 because member A received 4 nominations

out of the possible maximum of 3 not counting self-ratings and the other three

members had none) and 0% for team two (i.e., the sum of differences is zero because

everyone has the same number of ties), meaning team one has a complete hierarchical

one-leader structure and team two has a complete flat shared leadership structure.

The network density and centralization for each team are interpreted as the degree

of the team's shared leadership structure. Density, in general, represents the amount of

activities in a network and centralization represents the pattern of these activities in

terms of variability among actors. In a large network, these two measures can be

relatively independent—for example, a network of 1000 may have 100 ties

centralized around a few key players or 100 ties dispersed all over. However, because

the size of the team in this study is relatively small—for example, it is mathematically

impossible for any teams with more than 4 ties to have only one single leader because

any team member can only be nominated by up to 4 people (including self) as the

team leader—the two measures were highly correlated r (34) = -.74, p < .001. The

higher density, the more likely the leadership structure is dispersed, and therefore the

lower centralization. Because these two SNA indices are so closely related in this

study, only density was used to measure the teams' self-ratings of shared leadership.

Descriptive and Correlational Statistics

Descriptive statistics, including means and standard deviations for each variable

during each performance cycle, as well as correlations among all variables, are

presented in Table 1. A variable-by-time-point comparison of correlation coefficients

demonstrates that for all but one variable (i.e., productivity), the autoregressive

correlations (i.e., correlations of the same variable across different time points) were

stronger than the correlations among different variables measured at the same time

point. While the three measurements of productivity did not correlated significantly

with each other, interestingly, productivity at T1 and T2 were significantly correlated

with collective efficacy at T2 and T3.

Growth Models

To test the hypotheses, growth models were employed and analyzed with the

HLM6 software (Raudenbush, Bryk, & Congdon, 2006). First, the impacts of the

manipulations were examined. Because all measures collected at the individual level

had been aggregated to the team-level, the data were structured as time points nested

in teams and analyzed using a two-level model: The level-one model describes the

within-team change over three time points (i.e., year), and the level-two model

describes how these changes vary between teams. At the first level, an outcome

variable is regressed on a time variable, which in this case is year, coded in three

levels representing the three performance periods in the experiment. In this model, the

intercept represents the predicted initial status of the outcome, and the slope

associated with the time variable (i.e., year) estimates the average within-team growth

rate. At the second level, predictor variables are added as attempts to account for the

between-team variances in both the intercept and growth rate of the outcome variable.

Hypotheses 1 and 2 were tested, with full maximum likelihood estimation, in the

first model with shared leadership (i.e., observer ratings) as the outcome variable and

the experimental conditions as the predictor variables, as shown in Table 2. In this

model, shared leadership was included as the outcome variable. At level-1, the

average intercept and growth rate of shared leadership were first estimated across all

conditions. Then at level-2, the emergence of shared leadership was compared across

four experimental conditions, resulted from two manipulated variables (i.e., 2X2 with

leader assignment and role information). The condition with the leader assignment

and no role information, based on the hypotheses, was expected to have the lowest

shared leadership and therefore was used as baseline in this set of models. The three

other conditions (i.e., no leader assignment plus role information; no leader

assignment or role information; leader assignment plus role information) were then

compared to baseline. The parameters associated with each condition represent the

estimated difference between that condition and baseline in their effects on both the

intercept and growth of shared leadership.

Results, as shown in Table 2, implies that the emergence of shared leadership was

not predicted by either input variables (i.e., manipulations) because shared leadership,

both the average initial ratings and the change trajectories, did not differ significantly

across experimental conditions. First, for initial status, there were small mean

differences across the experimental conditions, and interestingly, in the direction

opposite to the hypothesis—all three comparison groups showed slightly lower, not

higher, shared leadership ratings than the baseline (i.e., β_{01}, β_{02} and β_{03} were all

negative, resulting in group means below the baseline condition at Year 1). However,

none of the coefficients were statistically significant, which means the experimental

conditions did not lead to difference in average shared leadership ratings during the

first performance cycle. Second, and more importantly, for growth trajectories, the

slight differences in growth rate were in the same direction as expected—all three

conditions showed faster growth in shared leadership than the baseline (i.e., β_{11}, β_{12}

and β_{13} were all positive). However, again, none of the differences was statistically

significant. Therefore, hypotheses 1 and 2 were not supported.

To test hypotheses 3 and 4, the effects of team processes, namely, collective

efficacy (i.e., magnitude) and team cohesiveness, on the emergence of shared

leadership were tested in the next model (see Table 2). Shared leadership was again

included as the outcome variable, and collective efficacy and team cohesiveness were

included, group mean centered, in the level-1 model to examine how within-team

change in predictors results in change in outcome. In addition, both predictor

variables were entered in the level-2 model with grand mean centering to test for

mean effects. This modeling technique, which removes group means at level-1

through group-mean centering and adds them back in at level-2, is recommended by

Hedeker and Gibbon (2006) to handle time-varying predictors. Entering a

time-varying predictor at both levels in this fashion allows for the decomposition of

its effects—level-1 effects can be interpreted while mean effects are controlled for at

level-2. For the second model, the combined regression equation is shown below:

$$\text{Shared leadership} = \beta_{00} + \beta_{01}(\textit{Collective efficacy}) + \beta_{02}(\textit{Team Cohesiveness})$$
$$+ \beta_{10}(\text{YEAR}) + \beta_{11}(\text{YEAR})(\textit{Collective efficacy}) +$$
$$\beta_{12}(\text{YEAR})(\textit{Team cohesiveness}) + \beta_{20}(\text{Collective efficacy}) +$$
$$\beta_{30}(\text{Team cohesiveness}) + r_1(\text{YEAR}) + r_0$$

There are three coefficients for each time-variant predictor in this equation that

can be interpreted: β_{01}, β_{11} and β_{20} for collective efficacy, and β_{02}, β_{12} and β_{30} for team

cohesiveness. As shown in the previous model, β_{01} and β_{02} represent the between-team

effects of predictors on the intercept of outcome, and β_{11} and β_{12} represent the

between-team effects of predictors on the growth of outcome. These four effects serve

as control variables in this model because the interpretation for these effects is that on

average, teams with higher collective efficacy and team cohesiveness start with higher

(or lower) shared leadership and develop more (or less) shared leadership over time.

However, the hypothesized effects focus on the growth, rather than the mean, of the

predictors, which are represented by β_{20} and β_{30} in this model. These two coefficients

are interpreted as the average team's gain (or loss) on shared leadership per unit

growth of collective efficacy and team cohesiveness regardless of where they stand on

these predictors (i.e., when mean effects are controlled for). As shown in Table 2,

neither one of β_{20} and β_{30} was statistically significant, therefore providing no evidence in support of hypotheses 3 and 4.

The effect of shared leadership on productivity and adaptability, as predicted in hypotheses 5 and 6 were tested in the third model shown in Table 2. Productivity was included as the outcome variable. Adaptability was manifested as change in productivity, and therefore could be simultaneously tested in the same models. Using the same approach on modeling time-variant predictors as above, shared leadership was included in the level-1 model group-mean centered and the level-2 model grand-mean centered.

Slightly differently from the previous set of models, where the mean effects of predictors were treated as control variables, in the test of hypotheses 5 and 6, the effects of both the mean and growth of shared leadership are part of its emergence. Therefore, all three coefficients related to shared leadership, β_{01}, β_{11} and β_{20}, should be examined. β_{01} represents the average difference in productivity due to one unit difference in shared leadership; β_{11} represents the average difference in adaptability (i.e., change of productivity) due to one unit difference in shared leadership; and β_{20} represents the change in productivity for an average team due to one unit change in its shared leadership when controlling for the mean. Since none of β_{01}, β_{11} and β_{20} was found to be statistically significant, there was no evidence for the hypothesized relationships between shared leadership and productivity, as well as its change (i.e., adaptability) over the three performance cycles.

Hypothesis 7 was subsequently examined using the same model as above with

innovation as the outcome (see Table 2). Again, β_{01}, β_{11} and β_{20} did not yield any

statistical significance. Therefore, shared leadership was not found to be significantly

related to innovation either at the mean level or across time and hypothesis 7 was not

supported.

Finally, the effects of all predictors (i.e., leader and role assignments, collective

efficacy, team cohesiveness, shared leadership) on the growth trajectory of the

outcomes (i.e., productivity, innovation) were examined in various combinations.

Statistically significant results were only yielded for the mean effect of collective

efficacy on productivity over time. The final model that provided the best fit is as

follows:

Level-1: Productivity $= \pi_0 + \pi_1 \text{(YEAR)} + \pi_2 \text{(Collective efficacy)} + \varepsilon$

Level-2: $\pi_0 = \beta_{00} + \beta_{01}$ *(Collective efficacy)* $+ r_0$

$\pi_1 = \beta_{10} + \beta_{11}$ *(Collective efficacy)* $+ r_1$

$\pi_2 = \beta_{20}$

Results from the final fitting of this set of models, as shown in Table 3, showed a

significant and positive main effect of the predictor (i.e., collective efficacy) on the

intercept ($\beta_{01} = 19.20$, $p<.001$), which indicated that, on average, teams scored 19.20

points higher on productivity than the intercept of 57.33 for every point increase in

collective efficacy. In addition, the cross-level interactive term between collective

efficacy and time, indicating the impact of the predictor on average on the outcome

growth trajectory, was also significant, however, in the opposite direction ($\beta_{11} = -7.27$,

$p<.01$), which means on average, teams with higher collective efficacy did not grow

as fast in productivity—the growth in productivity slows down by 7.27 points from

the average of 10.40 points per year for every point increase in collective efficacy.

As presented in Table 3, pseudo-R^2 statistics were utilized as indicators of model

improvement—the proportional reduction in residual variance is computed to examine

the extent to which adding process predictors (i.e., shared leadership, collective

efficacy, team cohesiveness) explains more variance in the productivity (Singer &

Willett, 2003). R^2_ε represents decreases in within-team residual variance and as

predicted, the linear time variable explained 37% of the within-team variation in

productivity. There are two between-team residual variance components. The

reduction of between-team variance in productivity can be assessed with R^2_0, and R^2_1

represents the percentage reduction of variance in the change rate of productivity

between teams. Both between-team R^2 statistics reflected that collective efficacy

explained the largest amount of variance in both the mean level and change rate of

productivity—neither shared leadership and team cohesiveness explained much, if

any at all, additional between-team variance. The model including only collective

efficacy as the predictor was therefore the most parsimonious.

Regression Analyses

In addition to the growth models using observer ratings, a series of supplementary

regression analyses were conducted to examine the emergence and effects of shared

leadership using the SNA measures based on team self-ratings collected at the end of

the experiment. These regression models are parallel to the growth models tested

above. However, because the self-rated data on shared leadership were only available

at one time point (T3), growth effects could not be estimated.

In the first model, self-rated shared leadership was regressed on the experimental conditions. In the baseline condition with a leader appointment and no role assignment, the average team self-rated shared leadership was 7.38 (i.e., approximately 7 ties among team members). None of the experimental condition was different from each other at a statistically significant level. However, all the parameter estimates were positive, meaning the baseline condition was rated the lowest in shared leadership by team members at the end, which is more consistent with the hypothesized direction than what was found in the first set of growth models in terms of treatment effects on the initial status of shared leadership.

Secondly, self-rated shared leadership was regressed on the measures of collective efficacy and team cohesiveness taken at time 3. No statistically significant results were yielded for either of the predictors—the two of them combined together explained a mere 1.5% of variance in the teams' self-ratings of shared leadership in this model.

Finally, the two team outcomes, productivity and innovation, were regressed on the team self-rated shared leadership in two separate models. Again, neither model yielded any statistically significant findings. In the first model, shared leadership explained only .3% of variance in team productivity at T3, and in the second model, only 1.3% of variance in team innovation at time T3 can be explained by the team ratings of shared leadership at the end.

Discussion

Overall, evidence for the hypothesized emergence or impact of shared leadership

was not found. In the next section, several issues and limitations, both

methodologically and analytically, are scrutinized and addressed in the attempt to

understand some of the possible underlying causes of the current findings. In addition,

recommendations with regard to improvements in future endeavors on this topic of

research are discussed.

Limitations

First and foremost, there are several limitations relating to the design of the study.

One of the unique contributions of the current study is the use of experimental design

intended to establish causal relationships and document emergent properties. However,

the two experimental manipulations (i.e., leader designation and role assignment)

failed to differentiate the teams at a statistically significant level. This is likely to be

an issue related to statistical power, which is mainly contingent on two factors: sample

size and effect size. The sample size in this study is relatively small—while the

overall *n* is sufficient, there are less than ten teams in each experimental condition. A

larger sample would increase the chance of differences, if any, being detected.

The other relevant element is the strengths of the two experimental manipulations.

In this case, it was unclear whether the manipulations have sufficiently discriminated

the conditions as expected. For the role assignment manipulation, participants

assumed the same roles in both conditions—the only difference was if they were

made aware of it at the beginning and reminded throughout the experiment. However,

most teams in the no role assignment condition were able to figure out each other's

roles on their own within minutes upon initiation of discussion. And because the task

is content-driven and the roles are a critical part of the content, even teams that were

in the no role assignment condition and did not receive the role reminders (i.e., place

cards with job titles) were likely to remain aware of the roles once they had figured it

out. The treatment effect then most likely faded for the remaining time of the task.

In addition, the proportion of unshared information relevant to decision-making

may have been too large compared to that of shared information in this task,

artificially increasing the bias towards the sampling of unshared information. In other

words, the chance of team members bringing up their unique information in the

discussion was high in both role assignment and no role assignment conditions,

simply because the shared information (i.e., movie scripts) was not adequate for

decision-making. This created an inconsistency with the typical design by Stasser and

colleagues (Stasser et al., 1995), which usually features the majority of information

related to decision-making being shared with a few unshared but critical clues

distributed to individual team members. In their scenarios, teams can make decisions

based on the shared information but cannot reach the optimal solution without the

unshared information. In the current study, however, without the unshared information,

there is little basis for decision-making other than team members' personal

movie-going experience and preference. This could explain why they turned to the

unique role information quickly, even in the no role assignment condition. Thus,

teams in the role assignment condition did not have much advantage in discovering

the unshared information.

The reason why the leader manipulation did not produce enough differentiation between groups is most likely due to random assignment. There was no systematic control or assessment of the assigned participants' skills, abilities, characteristics, readiness or preference to be a leader. In addition, there was no recurring reinforcement of the manipulation throughout the entire task period beyond the initial assignment. Even though the signature requirement was initially designed to maintain the manipulation, because participants did not have to sign until the end of each discussion period, it was questionable whether the manipulation was in effect during the deliberation periods. Some evidence, both from observation and post-task debriefing discussions among participants, suggests that participants in the leader assignment condition sometimes "forgot" who was assigned as the leader.

Second, the lack of support for the positive effect of shared leadership on team outcomes could be due to limitations associated with the measurement of shared leadership. The global observer ratings of shared leadership focused on the assessment of structure, rather than quality, of shared leadership. In other words, while the ratings were made based on frequencies of leadership behaviors exercised by and distributed across team members, there was no indicator of how well the behaviors were demonstrated. For example, a team with one member demonstrating exceptionally effective leadership behaviors would receive a rating of 1 (i.e., the team had a one-leader structure), where as a team with four members equally exercising less effective leadership behaviors would receive a rating of 4 (i.e., the team had a

4-leader structure). This decision was based on the premise that a distributed structure is necessary for success in this task. However, it is also possible for one leader to be effective in this situation if s/he serves as a facilitator rather than a holder of decision-making power (Ray, 1999).

In addition, team members' perception of leadership was not accounted for in the observer ratings. Evidence of agreement between observer ratings and team self-ratings of shared leadership was minimum, given the low correlations between the two, as well as the low and mixed (i.e., both positive and negative) correlations between observer-ratings of shared leadership and the other two self-reported team processes.

Third, analytically, the use of linear growth models may have been insufficient to capture the emergence of shared leadership. Although the means of shared leadership observer ratings across three time points (M_{t1} = 2.44; M_{t2} = 2.50; M_{t3} = 2.59) showed an approximately linear growth pattern on average, the autoregressive correlations revealed that the between-team variance in growth might have been quite different at each time point. Specifically, the correlation between time 2 and time 3 ratings (r = .70) was almost double the correlation between time 1 and time 2 (r = .39) for observer ratings of shared leadership. This signals a possibly more complicated pattern of emergence in shared leadership and requires a further and closer examination in detail.

Future Research Directions

The current study was an attempt to understand the mechanism related to shared

leadership as an emergent state. The use of experimental designs affords the advantage of allowing one to closely monitor the emergence of shared leadership over time in a controlled environment, which cannot be accomplished with cross-sectional data that are correlational in nature. More experimental studies on shared leadership therefore would be a valuable contribution to the field. The current study offers some insights on potential methodological improvements for the future.

The lack of clarity in the results and the questions raised on the measurement of shared leadership also call for a revisit to the conceptualization of the construct. As mentioned before, the core of this concept, as defined by Pearce and Conger (2003), is the 'dynamic influence process". It is unclear whether the focus on traditional leadership behaviors, even when measured in a network fashion, is sufficient to capture this concept of dynamic influence. The development of more innovative methods of assessing shared leadership, potentially through more sophisticated applications of SNA, is warranted.

The conceptualization of shared leadership as an emergent state needs to be further examined empirically, especially with longitudinal data. As shown in this study, the emergence of shared leadership may be more complicated than currently hypothesized. Nonlinear growth patterns should be considered and explored both theoretically and analytically.

Despite the lack of findings on shared leadership, results on collective efficacy, although not the focus of this study originally, are nonetheless intriguing. Consistent with previous research, collective efficacy was found to be positively related to

performance (Gully et al., 2002). However, the negative relationship between the average level of collective efficacy and productivity growth trajectories has never been investigated before. One possible explanation is teams lower on collective efficacy at the beginning were more attentive to negative feedback and self-corrected, which led to more growth. Also, the team that started lower also had more room for improvement. More research with longitudinal designs in the future would be necessary to study the effect of feedback in greater detail. The concurrent interplay between feedback and processes also may be more complicated than a linear relationship and should be further studied.

In conclusion, the current study contributes to the current literature on shared leadership both theoretically and methodologically by studying its emergence through a controlled laboratory experimental design and growth modeling. Although the hypotheses were not supported in the statistical tests with the current sample, the inconclusiveness of the results points to the potential complexity of the problem and calls for more future research.

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Figure 1. IMOI model: Shared leadership as the mediator
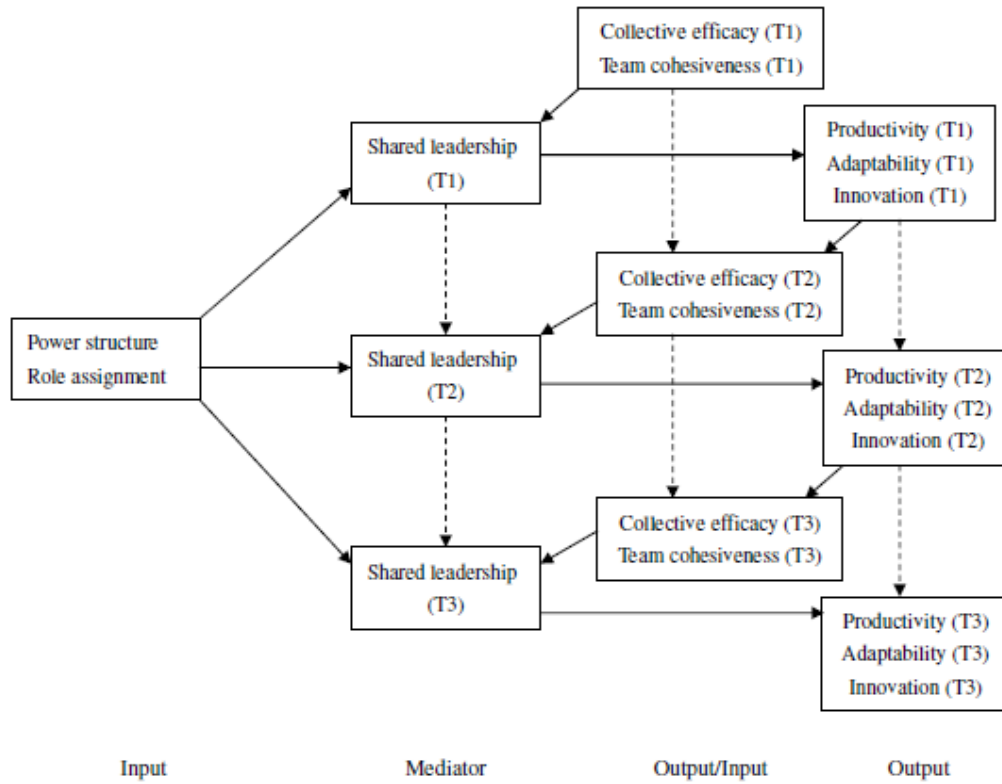
Figure 2. Illustration of SNA with two examples

Data matrices:

Team One:

Who do you see as the leader of your team? Check all that apply.

	A	B	C	D
A	1	0	0	0
B	1	0	0	0
C	1	0	0	0
D	1	0	0	0
Total	4	0	0	0

Team Two:

Who do you see as the leader of your team? Check all that apply.

	A	B	C	D
A	1	1	1	1
B	1	1	1	1
C	1	1	1	1
D	1	1	1	1
Total	4	4	4	4

Sociograms:
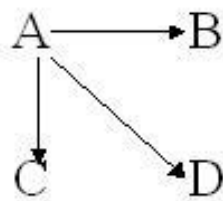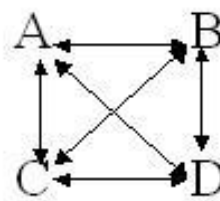
Team One   Team Two

Table 1

Descriptive statistics: Mean, Standard Deviation, and Correlation Matrix for Shared Leadership (observer ratings), Collective Efficacy (Magnitude), Team Cohesiveness, Productivity and Innovation during Cycle 1, Cycle 2 and Cycle 3, and Shared Leadership (team self-reports)

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Collective efficacy (T1)	8.51	.69	1																
2. Collective efficacy (T2)	8.00	.87	.42*	1															
3. Collective efficacy (T3)	8.16	.85	.49**	.76**	1														
4. Team cohesiveness (T1)	2.67	.25	.07	-.06	-.10	1													
5. Team cohesiveness (T2)	2.79	.21	.00	.24	.20	.39*	1												
6. Team cohesiveness (T3)	2.87	.18	-.10	-.04	.05	.25	.35*	1											
7. Shared Leadership: Observer Rated(T1)	2.44	1.02	.15	-.22	-.35*	.11	.21	.10	1										
8. Shared Leadership: Observer Rated(T2)	2.50	.96	-.04	-.24	-.30	.13	.31	-.04	.39*	1									
9. Shared Leadership: Observer Rated(T3)	2.59	1.08	.18	.09	.03	.10	.30	.11	.34	.70**	1								
10. Shared Leadership: Density (T3)	7.97	3.74	.08	.08	.12	.15	-.10	.05	-.20	.13	.23	1							
11. Shared Leadership: Centralization (T3)	69.61	40.51	-.12	.08	.04	.21	.04	.00	.07	.32	.27	-.74**	1						
12. Productivity (T1)	67.40	14.78	.26	.41*	.64**	.07	.37*	.30	-.35*	-.10	.05	-.06	.09	1					
13. Productivity (T2)	79.47	16.03	-.21	.29	.37*	-.19	.01	-.10	-.11	-.13	-.01	.12	.05	.16	1				
14. Productivity (T3)	87.51	11.30	-.22	-.16	-.01	-.17	-.04	-.05	-.09	.05	-.04	-.06	.06	-.05	.20	1			
15. Innovation (T1)	33.41	12.49	-.09	-.23	-.25	.28	.01	-.12	.05	.11	-.14	-.33	.13	.07	-.19	-.14	1		
16. Innovation (T2)	28.12	16.72	-.23	-.27	-.41*	.17	.08	-.25	.19	.15	-.10	-.14	.08	-.15	-.26	-.31	.50**	1	
17. Innovation (T3)	27.59	19.37	-.25	-.32	-.29	.14	.16	-.21	.06	-.03	-.18	-.11	.08	.03	-.07	-.10	.48**	.74**	1

*$p < .05$

**$p < .01$

Table 2

Hierarchical Linear Modeling Results for All Hypotheses

Model	Initial status				Rate of change				Within-team effects	
	β_{00}	β_{01}	β_{02}	β_{03}	β_{10}	β_{11}	β_{12}	β_{13}	β_{20}	β_{30}
Hypothesis 1 and 2										
L1: SL $= \pi_0 + \pi_1$ (YEAR) $+ \varepsilon$										
L2: $\pi_0 = \beta_{00} + \beta_{01}$ (NLR) $+ \beta_{02}$ (NLNR) $+ \beta_{03}$ (LR) $+ r_0$	2.75***	-.45	-.63	-.45	-.13	.35	.25	.18		
$\pi_1 = \beta_{10} + \beta_{11}$ (NLR) $+ \beta_{12}$ (NLNR) $+ \beta_{13}$ (LR) $+ r_1$	(.46)	(.64)	(.66)	(.64)	(.21)	(.28)	(.29)	(.28)	-	-
Hypothesis 3 and 4										
L1: SL $= \pi_0 + \pi_1$ (YEAR) $+ \pi_2$ (**CE**) $+ \pi_3$ (**TC**) $+ \varepsilon$										
L2: $\pi_0 = \beta_{00} + \beta_{01}$ (CE) $+ \beta_{02}$ (TC) $+ r_0$										
$\pi_1 = \beta_{10} + \beta_{11}$ (CE) $+ \beta_{12}$ (TC) $+ r_1$										
$\pi_2 = \beta_{20}$	2.26***	-.55	1.01		.13	.19	.02		.19	-.21
$\pi_3 = \beta_{30}$	(.24)	(.31)	(1.36)	-	(.11)	(.15)	(.64)	-	(.15)	(.51)
Hypothesis 5 and 6										
L1: Productivity $= \pi_0 + \pi_1$ (YEAR) $+ \pi_2$ (**SL**) $+ \varepsilon$										
L2: $\pi_0 = \beta_{00} + \beta_{01}$ (SL) $+ r_0$										
$\pi_1 = \beta_{10} + \beta_{11}$ (SL) $+ r_1$	57.54***	-4.67			10.29***	1.36			-3.26	
$\pi_2 = \beta_{20}$	(3.66)	(4.53)	-	-	(1.60)	(1.98)	-	-	(2.17)	-
Hypothesis 7										
L1: Innovation $= \pi_0 + \pi_1$ (YEAR) $+ \pi_2$ (**SL**) $+ \varepsilon$										
L2: $\pi_0 = \beta_{00} + \beta_{01}$ (SL) $+ r_0$										
$\pi_1 = \beta_{10} + \beta_{11}$ (SL) $+ r_1$	35.61***	1.86			-2.95	-.84			.52	
$\pi_2 = \beta_{20}$	(2.69)	(3.33)	-	-	(1.47)	(1.82)	-	-	(1.67)	-

SL = Shared leadership; L1 = Level 1; L2 = Level 2; NLR = No leader with role assignment condition; NLNR = No leader with no role assignment condition;

LR = Leader with role assignment condition; CE = Collective efficacy; TC = Team cohesiveness

Bold: Group-mean centered

Italic: Grand-mean centered

In parentheses: Standard errors

$^{*}p < .05$

$^{***}p < .001$

Table 3

Results of the Hierarchical Linear Modeling Analysis: Model Comparisons (Productivity as Outcome)

		Parameter	Model A (Unconditional Growth)	Model B (Shared Leadership)	Model C (Processes)	Model D (Final)
Fixed Effects						
Initial status, π_0		β_{00}				
	Intercept		58.02^{***} (3.83)	57.54^{***} (3.66)	56.00^{***} (3.98)	57.33^{***} (3.50)
	COLLECTIVE EFFICACY	β_{01}			17.25^{**} (5.05)	19.20^{**} (5.13)
	SHARED LEADERSHIP	β_{02}		-4.67 (4.53)	-5.53 (4.38)	
	TEAM COHESIVENESS	β_{03}			39.70 (22.19)	
Rate of change, π_1		β_{10}				
	Intercept		10.05^{***} (1.64)	10.29^{***} (1.60)	11.06^{***} (1.85)	10.40^{***} (1.57)
	COLLECTIVE EFFICACY	β_{11}			-6.42^{**} (2.67)	-7.27^{**} (2.30)
	SHARED LEADERSHIP	β_{12}		1.36 (1.98)	1.99 (1.98)	
	TEAM COHESIVENESS	β_{13}			-18.83 (9.99)	
Variance Components						
Level-1	Within-team	ε	166.01 (12.88)	164.05 (12.81)	141.74 (11.91)	152.22 (12.34)
Level 2	Initial Status	r_0	112.58 (10.61)	68.24 (8.26)	27.02 (5.20)	30.25 (5.50)

		8.49	3.64	.28	.42
In rate of change r_1	(2.91)	(1.91)	(.53)	(.65)

Pseudo R² Statistics

R^2_ε	0.37	0.38	0.46	0.42
R^2_0		0.39	0.76	0.73
R^2_1		0.57	0.97	0.95

In parentheses: Standard errors

*p < .05

**p < .01

***p < .001

Appendix A
Screening Measure: Surgency/Extroversion (IPIP)

1. I am the life of the party.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

2. I feel comfortable around people.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

3. I start conversations.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

4. I talk to a lot of different people at parties.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

5. I don't mind being the center of attention.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

6. I make friends easily.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

7. I take charge.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

8. I know how to captivate people.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

9. I feel at ease with people.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

10. I am skilled in handling social situations.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

11. I don't talk a lot.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

12. I keep in the background.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

13. I have little to say.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

14. I don't like to draw attention to myself.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

15. I am quiet around strangers.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

16. I find it difficult to approach others.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

17. I often feel uncomfortable around others.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

18. I bottle up my feelings.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

19. I am a very private person.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

20. I wait for others to lead the way.

Strongly Disagree	Disagree	Neither Disagree or Agree	Agree	Strongly Agree
1	2	3	4	5

Appendix B

Tinsel Town: Complete Simulation Materials

Simulation Algorithms

(1)   **Movie Profit (**in millions**)** = Movie Revenue – Movie Cost

………………………………………………………………….

(2)   **Movie Cost (**in millions**)** = Production Cost + Marketing Cost

(3)   **Movie Revenue** (in millions) = Average Ticket Price * #Viewers

……………………………………………………………………….

(4)   **#Viewers (**in millions**)** = Viewer Appeal* Movie Quality*MPAA Rating

………………………………………………………………………..

(5)   **Viewer Appeal** = (Content Appeal + Star Appeal)*Marketing Level

(6)   **Movie Quality[a] =** Script Quality*Director Skill*Acting Quality[b]

   For a movie with 2 Lead Roles:

 (6a) **Acting Quality** = (LR Acting Skill$_1$ * LR Acting Skill$_2$)$^{.5}$

   For a movie with 3+ Lead Roles:

 (6b) **Acting Quality =** Σ(LR Acting Skill)/# Lead Roles

---

[a]Movie Quality for Animated Films = Script Quality*Script Quality*Director Skill
[b]The Acting Skill of Supporting Actors is ALWAYS ignored for the purposes of calculating Acting Quality.

GENERAL MEMO

To: Vice-President, Script Evaluation
            Vice-President, Industry Research
            Vice-President, Talent Appraisal
            Vice-President, Marketing
            (No role-assignment condition: All Vice-Presidents)
From: Stan Friedman, CEO

RE: Choosing films for production next year

Thanks for agreeing to meet on such short notice. As usual, the task in front of you is one of picking the movies that we will produce and release in the upcoming year. The fiscal solvency of our studio is riding on the decisions you make. Pick the best movies and we (as well as our stockholders) will be swimming in profit; pick the wrong ones and we may go belly up.

As you all know, profit from the movies we make is determined by taking the revenue earned by each film and subtracting its cost:

Movie Profit = Movie Revenue – Movie Cost

Movie cost is estimated by adding the production cost (which is fixed) to the marketing cost (which is under our control):

Movie Cost = Production Cost + Marketing Cost

Movie revenue is estimated by multiplying the number of viewers by the average ticket price for a particular film:

Movie Revenue = # of Viewers * Average Ticket Price

As you are well aware, the number of viewers for any given film depends on five main factors: (1) Viewer Appeal, (2) Movie Quality, (3) Marketing, (4) MPAA rating, and (5) Average Ticket Price. *Viewer Appeal* is basically a function of popular interest in the film's content (i.e., setting, plot, special effects), as well as the popularity of the talent involved (i.e., director and actors/actresses). *Movie quality* is a function of the script quality, director's skill, and actor/actress' skill. All of these things interact with one another, and each one is important. If a movie has a good script and good actors/actresses but a terrible director, the movie will not be very good. Similarly, if a movie has a good director and good stars but a poor script, it will also be bad. It probably goes without saying that a movie that is poor in all three categories will just plain stink. *Marketing* obviously increases public awareness of our movie, and the *MPAA rating* constrains the size of our audience base. The *average ticket price* reflects the age of the average viewer and, to a certain extent, the time of day that the typical viewer goes to see the movie. Movies with the highest average ticket prices draw mostly adults who go to see the movie

in the evening; movies with lower average ticket prices attract younger viewers and people who go when matinees prices are in effect. ***The point here is that all five factors must be considered when estimating how much revenue a film will bring in.**.*

Our spending allowance for this year is $150 million. It's hard to tell from a brief summary how much a film is going to cost because it depends on many factors, including star salaries, shooting location and duration, and special effects. However, our screenplay reviewers are pretty good and the estimates they provide should be very close.

I would like you to examine the information at your disposal and figure out how to spend our $150 million to maximize total profit for the year. As usual, I don't care if you spend the $150 million on one blockbuster or divvy it up over 10 little art-house projects – just figure out the ones that will bring in the most profit. While a film's total revenue is important, keep in mind that it's return on investment that is critical. *In other words, the most important value to estimate is a potential film's profit divided by its cost (i.e., profit/cost, or profit ratio). Profit ratio reflects the number of dollars of profit we get for every dollar we spend.* A good film will end up making about twice as much as it cost (including marketing), and a great film may end up making three to four times as much.

And don't bother trying to save any money – it's there to be spent, so use as much as you can.

I know that picking movies isn't an easy task, but do the best you can. Your staffs have provided you with a good deal of useful information, and I think our screening team has identified a good set of potential choices for you. Feel free to use your personal experiences and gut feelings, but let the hard numbers provided by our research team have the final say. I look forward to seeing your recommendations on my desk next week. Good luck!

MEMO

To: Vice-President, Industry Research
From: Industry Research Staff

RE: Viewer Appeal ratings

Here is the market research that you requested on potential movies for next year. We pulled together 10 focus groups as usual to get this data. Each focus group was led by someone on our staff and involved a roundtable discussion of the movie's premise and cast, plus formal ratings of content and star appeal by each member of the focus group. We gave the focus groups the same movie capsules that your committee is using to make your decisions. See Table 1 for a summary of the findings from the focus group research.

Table 1 contains two separate estimates of a film's appeal based on its *content* and *stars*. We asked people in the focus group to discuss (and rate) Content Appeal and Star Appeal separately. **Content Appeal** concerns a movie's premise, plot, character development, and special effects; the film's genre and emergent themes play a role as well. **Star Appeal** has to do with the popularity of the actors/actresses as well as the director. Industry research suggests that content is roughly twice as important as stars in determining who goes to see a movie, so we scaled <u>Content Appeal values from 0-200, and Star Appeal values from 0-100</u>. Basically, a Content Appeal score of 200 means that the movie should have a very broad demographic appeal and the focus group participants were dying to see the screenplay get turned into a movie. In contrast, a Content Appeal score of 0 means that no one was interested in seeing the movie get made based solely on its subject matter. A Star Appeal score of 100 means that basically every role in the film has A-List stars that people want to see; a score of 0 means that the cast is essentially unknown to the audience. Star Appeal is based on physical attractiveness, charisma, and the success of recent films and has little to do with talent – it only reflects "popular demand."

Films with unusual situations and big-name stars tend to have more appeal to viewers. In particular, action/adventure, war, science-fiction, and suspense films tend to interest people more than dramas or comedies. Animated films almost always do well with families and often become blockbusters – they have a built-in audience if based on a book or story familiar to the audience. Horror movies do well with males (especially younger ones) and some pull in women as well. Comedies do well if the situation is right and the casting is good. Dramas are the most variable; they tend to draw discriminating viewers from all groups, but usually have much lower content appeal because their situations are more ordinary. More importantly, movies with lots of special effects are very attractive regardless of their genre – in part because of extensive repeat viewing.

To summarize, the Content Appeal and Star Appeal values quantify the appeal of a film based on its subject matter and cast, respectively. **A good overall index of the "buzz" surrounding a potential movie is to add up its Content Appeal and Star Appeal**.

Focus Group Research on Viewer Appeal of Potential Movies.

Movie Title	Content Appeal	Star Appeal	Staff Comments
Rikki-Tikki-Tavi	200.00	75.00	Families will eat this stuff up; the famous mongoose is loved by all. Focus groups liked the voices.
Light Years	185.00	30.00	Offbeat science fiction story from an A-list director. Story is intriguing, and will have great special effects.
Chosin Reservoir	150.00	50.00	Older viewers were intrigued by the history; younger viewers liked the realistic battle scenes.
Degeneration	130.00	55.00	Everyone loves a good zombie pic. Should provide nice mix of humor and special effects.
Renegade	130.00	80.00	A modern update of *Invasion of the Body Snatchers*. The huge *X-Files* fan base will love it, especially with Jessica Alba.
Rio	110.00	45.00	Mystery involving sex, murder, corruption – and the President. Should appeal to older viewers.
Sex Ed	80.00	40.00	Sex in the schools is a perfect target, and focus groups responded well. No headliners, but good cast.
Southern Accents	75.00	30.00	Gritty realism – story appealed more to women, but men really liked Eliza Dushku.
Fast Food	70.00	70.00	Spoof of typical fast food joint scored about average on content; perfect casting in this one.
A Lifetime of Anger	65.00	45.00	A biting tragedy; this may be the tear-jerker of the year. No major female roles hurts appeal some.
On Campus	50.00	0.00	Documentary-style exploration of college life. Viewer appeal will be somewhat limited to older teens and young adults.

MEMO

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From: Industry Research Staff

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Films with unusual situations and big-name stars tend to have more appeal to viewers. In particular, action/adventure, war, science-fiction, and suspense films tend to interest people more than dramas or comedies. Animated films almost always do well with families and often become blockbusters – they have a built-in audience if based on a book or story familiar to the audience. Horror movies do well with males (especially younger ones) and some pull in women as well. Comedies do well if the situation is right and the casting is good. Dramas are the most variable; they tend to draw discriminating viewers from all groups, but usually have much lower content appeal because their situations are more ordinary. More importantly, movies with lots of special effects are very attractive regardless of their genre – in part because of extensive repeat viewing.

To summarize, the Content Appeal and Star Appeal values quantify the appeal of a film based on its subject matter and cast, respectively. **A good overall index of the "buzz" surrounding a potential movie is to add up its Content Appeal and Star Appeal**.

Focus Group Research on Viewer Appeal of Potential Movies.

Movie Title	Content Appeal	Star Appeal	Staff Comments
The Reactor	190.00	95.00	This looks like a can't-miss summer blockbuster – great special effects and all-star cast.
We, The People	180.00	80.00	The war on terrorism takes an Orwellian turn after a U.S. city is nuked. Popular cast and knock-out special effects. Very timely.
Oil & Water	170.00	70.00	There is a huge market out there for this kind of film. A 21st century take on *The Parent Trap*.
Air Cav	160.00	55.00	Sort of *Black Hawk Down* set in Vietnam – above average cast; very realistic.
Welcome to My Room	150.00	50.00	Spoof of suburbia and documentaries seen through the eyes of a kid. Nice supporting cast.
Line of Duty	140.00	100.00	An action flick with a twist – focus groups were drooling over the cast.
Extrapolation	115.00	35.00	Hot topic due to popularity of "Diablo" computer game. Should bring out the teens.
The Devil Made Me Do It	115.00	25.00	Chilling mystery that had focus groups intrigued; no-name cast, though.
The Wolf's Lair	100.00	65.00	Interesting mix of war, suspense and character study with solid casting, but some viewers will know the outcome.
Hoover	95.00	85.00	Most people don't know who J. Edgar Hoover is, but an outstanding cast.
A Good Day to Die	60.00	85.00	Sounds like a real downer, but Ang Lee, Tom Hanks, and Jennifer Connelly will bring in a lot of viewers.

MEMO

To: Vice-President, Industry Research
From: Industry Research Staff

RE: Viewer Appeal ratings

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Focus Group Research on Viewer Appeal of Potential Movies.

Movie Title	Content Appeal	Star Appeal	Staff Comments
The Colony	195.00	100.00	What's not to like? Interesting premise, great special effects, stellar cast. Huge demographic appeal; can't-miss territory.
My Lai	180.00	70.00	Oliver Stone goes back to Vietnam to dissect a real cover-up. Quite a buzz on this one in the industry.
Hybreed	110.00	55.00	*Charlie's Angels* meets *Alien*. Should appeal to young male demographic.
1-900	110.00	45.00	Low budget, funny, kinky. Sex always sells, but target audience is fairly narrow.
Murder.com	100.00	50.00	Film about the growing connection between criminals and the Internet. Will definitely appeal to younger viewers.
Scranton	100.00	35.00	Sam Raimi knows how to do horror films, but the focus groups didn't like the stars in their roles.
The Winner	95.00	70.00	A tragedy for the 21st century – with an ambiguous ending that will have everyone talking. Leads had people drooling.
Hearts & Minds	95.00	50.00	A "chick flick" that didn't turn away men. Soderbergh and intriguing leads will bring people out.
Malled	85.00	60.00	Classic teen-oriented date movie that spoofs the American mall. Likeable leads and colorful supporting cast.
The Caddy	80.00	55.00	Low budget drama pushes the envelope with big names and a movie about sexual orientation.
The Shysters	75.00	65.00	Good spoof of religion; focus groups thought the cast was a great mix.

MEMO

To: Vice-President of Script Evaluation
From: Script Evaluation Staff

RE: Script Quality ratings for potential movies

Here is the information you requested regarding the movie screenplays that were sent to us for evaluation. We generated quality ratings by having two of our most experienced readers go through each screenplay and assign a rating on a scale of 1 to 10, then we averaged the ratings.

When we made our ratings, as always, we paid attention to the quality of the dialogue, plot coherence, pacing, and factors appropriate to each type of movie. For example, for dramas we considered character development and plot twists, whereas for science fiction films we looked for a unique vision of the future and a realistic extrapolation from current society. In other words, we took into account that what makes one kind of movie good is not necessarily the same thing that makes another kind of movie good.

We don't have to tell you that Script Quality is very important to the success of a movie – everything is riding on it. We can have all the big-name stars we want but if the script is terrible, it's not going to make back the money needed to pay all those stars! Make sure the other execs realize this.

Script Quality Ratings and Expected MPAA Ratings for Potential Movies.

Movie Title	Script Quality	Expected MPAA Rating
Degeneration	10	PG-13
On Campus	10	R
Southern Accents	10	R
Fast Food	9	PG
Sex Ed	8	PG-13
Rio	8	R
Chosin Reservoir	7	PG-13
Light Years	7	PG
Renegade	6	PG-13
Rikki-Tikki-Tavi	5	G
A Lifetime of Anger	4	PG-13

MEMO

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Script Quality Ratings and Expected MPAA Ratings for Potential Movies.

Movie Title	Script Quality	Expected MPAA Rating
The Wolf's Lair	10	PG-13
Extrapolation	9	PG-13
Welcome to My Room	9	PG
The Devil Made Me Do It	8	R
We, The People	8	PG-13
A Good Day to Die	7	PG-13
Hoover	7	PG
Line of Duty	6	PG-13
The Reactor	6	PG-13
Air Cav	5	PG-13
Oil & Water	3	G

MEMO

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From: Script Evaluation Staff

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Script Quality Ratings and Expected MPAA Ratings for Potential Movies.

Movie Title	Script Quality	Expected MPAA Rating
The Shysters	10	R
The Colony	9	R
My Lai	8	R
Hearts & Minds	7	R
1-900	7	NC-17
Murder.com	6	PG-13
The Winner	6	R
The Caddy	5	PG-13
Hybreed	4	PG-13
Scranton	4	R
Malled	3	PG

MEMO

To: Vice-President, Talent Appraisal
From: Talent Appraisal Staff

RE: Skill Ratings for Actors, Actresses, and Directors

We were finally able to compile the information regarding actor and director skill values. It took quite a bit of work, but we now have the data you requested.

Basically, we surveyed a panel of movie critics and asked them to rate a list of actors, actresses, and directors for their professional skill. For directors, we asked the critics to consider things like artistic vision, ability to inspire actors and actresses, work ethic, and capturing the "feel" of situations. For those in front of the camera, skill consists of raw acting talent, intensity, emotional expressiveness, and range.

Director Skill pertains to the ability of a director to create a unified artistic vision and get the most out of the actors and actresses. Director ratings were made on a scale of 1-10, with 1 indicating a true hack with no talent and 10 indicating a director who could make an Oscar-winner with volunteers from regional theater. Some of these ratings may surprise you. Acting Skill is primarily a function of an actor/actresses' ability to credibly display a range of emotions. Some actors/actresses are very good in limited roles, but the truly great ones can yearn, pine, lust, cry and rage with amazing ability. Actors and actresses are rated on a 5-point scale, with 1 indicating an actor/actress who would be challenged to do well on a soap opera and 5 indicating an actor/actress that can do any role with convincing authority.

With regard to how the Acting Skill of the various actors/actresses affects the overall Acting Quality of the movie, here is what our research seems to suggest:

    (1)   The Acting Skill of supporting actors can pretty much be ignored – these people are usually not on screen long enough for their flaws to do much damage.

    (2)   Acting Quality can be estimated by averaging the Acting Skill ratings for the Lead Roles. When there are only two lead roles, however, it's actually a little less than average if there is a large discrepancy in the Acting Skill values of the leads. In other words, the lesser actor weighs the film down.

Table 1.   Director Skill Ratings

Director	Skill Rating (0-5 stars)
John Carpenter	3.5
Chris Columbus	2
Stanley Eider	3
Nora Ephron	4
Milos Foreman	4.5
William Friedkin	3
Jonathan Glazer	3.5
Ron Howard	4
Jean Jacques-Annaud	3.5
Stephen King	2.5
Neil LaBute	4
Mimi Leder	3.5
Ang Lee	5
Barry Levinson	4
Michael Mann	4
Garry Marshall	3.5
John McTiernan	4
Sam Mendes	3.5
Mike Nichols	4
Wolfgang Peterson	3.5
Sam Raimi	3
Harold Ramis	3
Brett Ratner	2
Ivan Reitman	2.5
George Romero	3
Joel Schumacher	1.5
Ridley Scott	5
Bryan Singer	2.5
Steven Soderbergh	5
Oliver Stone	5
Billy Bob Thornton	3.5
Simon West	2
Robert Zemeckis	4.5

Table 2.   Acting Skill Ratings for Lead Actors (0-5 Stars).

Actor/Actress	Skill	Actor/Actress	Skill	Actor/Actress	Skill
Ben Affleck	3 ½	Josh Hartnett	3	Freddie Prinze, Jr.	3
Jessica Alba	3 ½	Ethan Hawke	3 ½	Dennis Quaid	3 ½
Kevin Bacon	4	Katie Holmes	3	Daniel Radcliffe	3 ½
Alec Baldwin	4 ½	Jeremy Irons	4 ½	Len Randall	4 ½
Tom Berenger	4	Samuel L. Jackson	4	Christina Ricci	5
Halle Berry	3 ½	Angelina Jolie	3	Denise Richards	2
Sandra Bullock	2 ½	Ashley Judd	4	Chris Rock	3
Steve Buscemi	4	Nastassia Kinski	4 ½	Keri Russell	3 ½
Nicholas Cage	3 ½	Eriq La Salle	3 ½	Kurt Russell	4
Hayden Christensen	3	Jude Law	4 ½	Elisabeth Shue	4
Jennifer Connelly	4 ½	Heath Ledger	3 ½	Gary Sinise	4 ½
Russell Crowe	5	Donal Logue	4	Tom Skelton	4 ½
Emily Cryton	5	Jennifer Lopez	3	Kevin Spacey	5
Matt Damon	4 ½	John Malkovich	4 ½	DeWayne Stevens	4
Keith David	4	Julianna Margulies	4	Sharon Stone	3
Daniel Day-Lewis	4 ½	James Marsden	3 ½	Madeline Stowe	4 ½
Vin Diesel	3 ½	Dylan McDermott	3	Kiefer Sutherland	3
Richard Dreyfuss	4	Rose McGowan	3 ½	Mena Suvari	3 ½
Eliza Dushku	4	Tobey McQuire	4 ½	Uma Thurman	4
Charles Dutton	3 ½	Teri Miller	4 ½	Amber Valletta	4 ½
Dakota Fanning	4 ½	Bill Murray	5	Mark Wahlberg	4
Will Ferrell	4	Liam Neeson	4 ½	Denzel Washington	5
Linda Fiorentino	4	Ronda Nelson	4	Damon Wayans	3
James Franco	3 ½	Edward Norton	5	Sigourney Weaver	5
Morgan Freeman	5	Chris O'Donnell	2 ½	Elijah Wood	4 ½
John Goodman	4	Haley Joel Osment	4	Michelle Yeoh	3 ½
Gene Hackman	5	Jason Owens	5	Catherine Zeta-Jones	3 ½
Tom Hanks	5	Anna Paquin	4 ½		
Ed Harris	4 ½	Natalie Portman	4 ½		

MEMO

To: Vice-President, Marketing
From: Marketing Staff

RE: Impact of Marketing Strategy, MPAA Rating, and Expected Ticket Prices

Table 1.

Marketing Strategy Information.

Strategy	Cost (in millions)	Impact on Viewer Appeal
Word-of-Mouth	$0	+0%
Print + Outdoor	$5	+30%
Pre-Release TV	$10	+55%
Saturation TV	$20	+75%

As shown in Table 1, there are four feasible marketing strategies we can employ, each with a given cost and impact. Note that, as our marketing strategy gets more sophisticated, the costs and the positive change in viewers go up. Basically, the more expensive the strategy, the more effective it is. It is important to note, however, that marketing is most effective when there is a movie with high Viewer Appeal – marketing doesn't help much if the content of the film isn't all that intriguing or if there are no big-name stars. If we're going to produce any "small" high-quality films, it's probably better to just rely on word-of-mouth to spread the news. Overall, a good strategy is to spend money marketing a movie in proportion to its cost – cheap ones we can get away with little or no marketing; expensive ones can benefit from saturation TV marketing.

Table 2.

Impact of MPAA Movie Rating on Size of Potential Viewer Base.

MPAA Rating	Projected Impact
G	0%
PG	-10%
PG-13	-15%
R	-25%
NC-17	-40%

As you can see, "R" or "NC-17" movies take a big hit in that a good proportion of people who go to see movies are excluded from the start. Even if those movies are good, we won't get as many people coming to see them simply because the potential viewer base is smaller! Obviously, "G" films give us the largest possible base, so we should keep an eye out for any of those.

Table 3.

Average Ticket Price in Dollars for Potential Movies.

Movie Title	Average Expected Ticket Price
A Lifetime of Anger	$ 7.50
Rio	$ 7.50
Southern Accents	$ 7.50
Chosin Reservoir	$ 7.25
Degeneration	$ 7.00
Light Years	$ 7.00
On Campus	$ 7.00
Renegade	$ 6.75
Fast Food	$ 6.50
Sex Ed	$ 6.50
Rikki-Tikki-Tavi	$ 6.00

We had the bean-counters in Finance use their fancy regression models to predict the average ticket price for each potential movie based on projected demographics. These financial models take into account a host of factors and they're usually pretty accurate. As you can see from Table 3, the potential movies for next year are predicted to have average ticket prices ranging from $6.00 to $7.50.

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To: Vice-President, Marketing
From: Marketing Staff

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Hoover	$ 7.50
The Devil Made Me Do It	$ 7.50
The Wolf's Lair	$ 7.50
Air Cav	$ 7.00
We, The People	$ 7.00
Line of Duty	$ 6.75
The Reactor	$ 6.75
Welcome to My Room	$ 6.50
Extrapolation	$ 6.25
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From: Marketing Staff

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Movie Title	Average Ticket Price
1-900	$ 7.50
The Winner	$ 7.50
Hearts & Minds	$ 7.25
My Lai	$ 7.25
The Caddy	$ 7.25
The Shysters	$ 7.25
The Colony	$ 7.00
Murder.com	$ 6.75
Hybreed	$ 6.50
Malled	$ 6.50
Scranton	$ 6.50

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Team Number: _____

Date: _____

FINAL RECOMMENDATION SHEET

1. You may only use the amount of money budgeted for this session, **$150 million**. <u>You cannot spend more than $150 million; if a plan that involves overspending is mistakenly submitted, your group will not be eligible to receive the performance bonus</u>. It is your responsibility to make sure that your plan is valid.
2. Any unused money will count towards your revenue.
3. All team members must sign the document; if any signatures are missing, the document will be returned.
4. You have 25 minutes to make your choices; if your team has not completed its selection process within the allotted time, only the valid choices you have selected will count and the unused portion of your budget will be counted as revenue.
5. TO CHOOSE A MOVIE FOR PRODUCTION, DO THE FOLLOWING:
    a. <u>Indicate your choice by checking the appropriate box below</u>
    b. <u>Choose a dollar amount to spend on marketing (the default is $0)</u>

Title	**Production $**	**+**	**Marketing $**				**=**	**Total $**
		(All amounts are in millions of dollars)						
❑ A Lifetime of Anger	$20	+	0	5	10	20	=	_____
❑ Chosin Reservoir	$46	+	0	5	10	20	=	_____
❑ Rikki-Tikki-Tavi	$65	+	0	5	10	20	=	_____
❑ Degeneration	$51	+	0	5	10	20	=	_____
❑ Fast Food	$25	+	0	5	10	20	=	_____
❑ Light Years	$90	+	0	5	10	20	=	_____
❑ On Campus	$12	+	0	5	10	20	=	_____
❑ Renegade	$38	+	0	5	10	20	=	_____
❑ Rio	$40	+	0	5	10	20	=	_____
❑ Sex Ed.	$29	+	0	5	10	20	=	_____
❑ Southern Accents	$23	+	0	5	10	20	=	_____

Total: _____ **<150**

Signatures:

Vice-President, Industry Research: _____

Vice-President, Script Evaluation: _____

Vice-President, Talent Appraisal: _____

Vice-President, Marketing: _____

(Leader appointment condition: Team Leader:_____)

Team Number: _____

Date: _____

REVENUE & PROFIT SHEET

Below is the list of possible movie selections for the first year. The first column shows the cost for each movie as given on the initial sheet; the second column indicates the marketing value of the movies (assumed to be $10 million for any movie your studio did not produce). The third column highlights profit generated from each movie based on the amount of marketing indicated. Please review and discuss this information with the rest of your team. (All amounts are in millions of dollars.)

Title	Production	Marketing	Revenue	Profit
❑ A Lifetime of Anger	$20	_____	_____	_____
❑ Chosin Reservoir	$46	_____	_____	_____
❑ Rikki-Tikki-Tavi	$65	_____	_____	_____
❑ Degeneration	$51	_____	_____	_____
❑ Fast Food	$25	_____	_____	_____
❑ Light Years	$90	_____	_____	_____
❑ On Campus	$12	_____	_____	_____
❑ Renegade	$38	_____	_____	_____
❑ Rio	$40	_____	_____	_____
❑ Sex Ed.	$29	_____	_____	_____
❑ Southern Accents	$23	_____	_____	_____

**A check mark in a box above indicates movies your studio produced.   +_____

Unspent

Total Profit for this year: _____

Percentage of Maximum Profit: _____

Team Number: _____

Date: _____

FINAL RECOMMENDATION SHEET

1. You may only use the amount of money budgeted for this session, **$150 million**. <u>You cannot spend more than $150 million; if a plan that involves overspending is mistakenly submitted, your group will not be eligible to receive the performance bonus.</u> It is your responsibility to make sure that your plan is valid.
2. Any unused money will count towards your revenue.
3. All team members must sign the document; if any signatures are missing, the document will be returned.
4. You have 25 minutes to make your choices; if your team has not completed its selection process within the allotted time, only the valid choices you have selected will count and the unused portion of your budget will be counted as revenue.
5. TO CHOOSE A MOVIE FOR PRODUCTION, DO THE FOLLOWING:
    a. <u>Indicate your choice by checking the appropriate box below</u>
    b. <u>Choose a dollar amount to spend on marketing (the default is $0)</u>

Title	**Production $** +		**Marketing $**			=	**Total $**
	(All amounts are in millions of dollars)						
❑ A Good Day to Die	$42 +	0	5	10	20	=	_____
❑ Air Cav	$49 +	0	5	10	20	=	_____
❑ Extrapolation	$27 +	0	5	10	20	=	_____
❑ Hoover	$55 +	0	5	10	20	=	_____
❑ Line of Duty	$46 +	0	5	10	20	=	_____
❑ Oil & Water	$23 +	0	5	10	20	=	_____
❑ The Devil Made Me Do It	$25 +	0	5	10	20	=	_____
❑ The Reactor	$67 +	0	5	10	20	=	_____
❑ The Wolf's Lair	$44 +	0	5	10	20	=	_____
❑ Welcome to My Room	$31 +	0	5	10	20	=	_____
❑ We, The People	$72 +	0	5	10	20	=	_____

Total: <u><150</u>

Signatures:

Vice-President, Industry Research: _____

Vice-President, Script Evaluation: _____

Vice-President, Talent Appraisal: _____

Vice-President, Marketing: _____

(Leader appointment condition: Team Leader:_____)

Team Number: _____

Date: _____

REVENUE & PROFIT SHEET

Below is the list of possible movie selections for the second year. The first column shows the cost for each movie as given on the initial sheet; the second column indicates the marketing value of the movies (assumed to be $10 million for any movie your studio did not produce). The third column highlights profit generated from each movie based on the amount of marketing indicated. Please review and discuss this information with the rest of your team. (All amounts are in millions of dollars.)

Title	Production	Marketing	Revenue	Profit
❑ A Good Day to Die	$42	_____	_____	_____
❑ Air Cav	$49	_____	_____	_____
❑ Extrapolation	$27	_____	_____	_____
❑ Hoover	$55	_____	_____	_____
❑ Line of Duty	$46	_____	_____	_____
❑ Oil & Water	$23	_____	_____	_____
❑ The Devil Made Me Do It	$25	_____	_____	_____
❑ The Reactor	$67	_____	_____	_____
❑ The Wolf's Lair	$44	_____	_____	_____
❑ Welcome to My Room	$31	_____	_____	_____
❑ We, The People	$72	_____	_____	_____

**A check mark in a box above indicates movies your studio produced.   +_____

Unspent

Total Profit for this year: _____

Percentage of Maximum Profit: _____

Team Number: _____

Date: _____

FINAL RECOMMENDATION SHEET

1. You may only use the amount of money budgeted for this session, **$150 million**. <u>You cannot spend more than $150 million; if a plan that involves overspending is mistakenly submitted, your group will not be eligible to receive the performance bonus</u>. It is your responsibility to make sure that your plan is valid.
2. Any unused money will count towards your revenue.
3. All team members must sign the document; if any signatures are missing, the document will be returned.
4. You have 25 minutes to make your choices; if your team has not completed its selection process within the allotted time, only the valid choices you have selected will count and the unused portion will be added to your revenue.
5. TO CHOOSE A MOVIE FOR PRODUCTION, DO THE FOLLOWING:
    a. <u>Indicate your choice by checking the appropriate box below</u>
    b. <u>Choose a dollar amount to spend on marketing (the default is $0)</u>

Title	Production $ +		Marketing $			=	Total $
	(All amounts are in millions of dollars)						
❑ 1-900	$18	+	0 5	10	20	=	_____
❑ Hearts & Minds	$32	+	0 5	10	20	=	_____
❑ Hybreed	$16	+	0 5	10	20	=	_____
❑ Malled	$20	+	0 5	10	20	=	_____
❑ Murder.com	$26	+	0 5	10	20	=	_____
❑ My Lai	$63	+	0 5	10	20	=	_____
❑ Scranton	$45	+	0 5	10	20	=	_____
❑ The Caddy	$26	+	0 5	10	20	=	_____
❑ The Colony	$81	+	0 5	10	20	=	_____
❑ The Shysters	$37	+	0 5	10	20	=	_____
❑ The Winner	$32	+	0 5	10	20	=	_____

Total: **____ <150**

Signatures:

Vice-President, Industry Research: _____

Vice-President, Script Evaluation: _____

Vice-President, Talent Appraisal: _____

Vice-President, Marketing: _____

(Leader appointment condition: Team Leader:_____)

Team Number: _____

Date: _____

REVENUE & PROFIT SHEET

Below is the list of possible movie selections for the third year. The first column shows the cost for each movie as given on the initial sheet; the second column indicates the marketing value of the movies (assumed to be $10 million for any movie your studio did not produce). The third column highlights profit generated from each movie based on the amount of marketing indicated. Please review and discuss this information with the rest of your team. (All amounts are in millions of dollars.)

Title	Production	Marketing	Revenue	Profit
❑ 1-900	$18	_____	_____	_____
❑ Hearts & Minds	$32	_____	_____	_____
❑ Hybreed	$16	_____	_____	_____
❑ Malled	$20	_____	_____	_____
❑ Murder.com	$26	_____	_____	_____
❑ My Lai	$63	_____	_____	_____
❑ Scranton	$45	_____	_____	_____
❑ The Caddy	$26	_____	_____	_____
❑ The Colony	$81	_____	_____	_____
❑ The Shysters	$37	_____	_____	_____
❑ The Winner	$32	_____	_____	_____

**A check mark in a box above indicates movies your studio produced.   +_____

Unspent

Total Profit for this year: _____

Percentage of Maximum Profit: _____

Screenplay Profile

Title: *Hybreed*

Genre: Horror

Audience: Teens, especially males

Plot Summary:

Researchers at a prestigious medical research firm are getting very close to a cure for cancer. A team of top researchers has been creating new cells that would replace the cancerous cells and reproduce completely to restore the individual to health. Before completing the last steps of the process, one of the lead researchers is discovered embezzling money from the research funds. The researcher is fired but, before leaving, combines many types of cancerous cells into an amphibian body with remarkable genetic reproductive capacity. Over the next week, an increasingly bizarre series of substances are discovered in different parts of the lab and many of the lab animals used for research are found mauled or eaten. When a female researcher is working alone late one evening, the audience finally sees a gruesome creature, which attacks and drags her off, unconscious, after an extended fight. Two other researchers working that night team up with an enterprising janitor to save all of their lives. In a grisly fight that ends up with two of the three humans dead, the creature is killed with the help of a rigged-up flamethrower and an acid sprayer. The movie ends with the strong hint that the first researcher is not dead, but rather infected and incubating somewhere in the facility.

Talent	Role	Type
Julianna Margulies	Researcher	Lead
Halle Berry	Researcher	Lead
Nastassia Kinski	Researcher	Lead
Jon Voight	Disgruntled researcher	Support
James Caan	Janitor	Support

Director: George Romero

Cost: $16 million

Screenplay Profile

Title: *The Winner*

Genre: Drama

Audience: Couples; adults

Plot Summary:

Chronicles the rise, fall and rebirth of a lottery winner. Madeline Stowe plays a good person and wonderful mother who is working a dead-end job but dreams of making it rich. One night, the dream comes true when she and her children hit the lottery jackpot. Overnight, the woman has more money than she could've imagined. She buys a large house and several cars, engages in torrid love affairs, and progressively isolates herself while alienating everyone who matters to her. When her children decide to run away to be with the father they have never known, the grief-stricken woman finally realizes what she has done. She decides to spare no expense in finding the children, but over the course of months the search is undercut by the greed of everyone around her. Unknown to the woman, one of her "one-night stand" lovers falls for her and initiates a search, finally locating the children on the other side of the country. The man tries to get word of the good news to the woman, but various problems prevent him from doing so; meanwhile, the despairing woman prepares to kill herself. She ends up hearing the message on her answering machine as she sits in a bathtub with slashed wrists. She struggles to get out while a next-door neighbor pounds at the door. The scene lingers and fades out to another where the woman, the neighbor and the children are playing together happily as a family. The movie leaves in doubt whether this image is the future or a final hallucination before her death.

Talent	Role	Type
Madeline Stowe	Lottery Winner	Lead
Daniel Day-Lewis	Neighbor	Lead
Jon Bon Jovi	Lover	Support
Joseph Fiennes	Lover	Support

Director: Nora Ephron

Cost: $32 million

Screenplay Profile

Title: *A Lifetime of Anger*

Genre: Drama

Audience: Diverse

Plot Summary:

Two brothers grew up in a dysfunctional family, learning to battle life's problems with hate and bitterness. Pulled back together for the funeral of their grandmother, the one person who truly showed them love, the two end up at a bar and all the old issues come out. Through flashbacks, the movie traces the brothers' long and troubled history, including their mother running out, their baby sister dying in a household accident caused by their father's drinking, and physical abuse by their father towards one of the brothers. The flashbacks reveal the holes in the brothers' lives that come from shutting each other out. Repressing their anger, the two end up engaging in a drinking contest, which then leads to a shouting match and an all-out fight in the middle of the bar. Enraged, one brother finally aims a gun at the other but, at the last instant, turns the gun on himself and pulls the trigger. Mortally wounded, he confesses how empty his life has been and how he knows deep-down that he has been the cause of their division. There is just enough time for the two to reconcile before the one brother dies. Several scenes then show the positive impact on the brother who lived, as he finally ends up knocking on the door to his father's house. The movie ends as the door opens.

Talent	Role	Type
Alec Baldwin	Brother	Lead
Nicolas Cage	Brother	Lead
David Morse	Bartender	Support
Liv Tyler	Waitress	Support

Director: Billy Bob Thornton

Cost: $20 million

Screenplay Profile

Title: ***Rikki-Tikki-Tavi***

Genre: 3-D Animation

Audience: Kids; families

Plot Summary:

Based on the best-selling children's stories by Rudyard Kipling. Set in India and using state-of-the-art 3-D technology, the movie follows the exploits of the beloved mongoose, Rikki-Tikki-Tavi, and his friends, Darzee and Chuchundra. At the beginning of the film, Rikki-Tikki-Tavi's curiosity nearly results in his drowning. Crawling out of a pond, he is found near death on a garden path by Anna, a little girl who belongs to an English couple who work at the British Foreign Ministry in the nearby city. Anna falls in love with Rikki and nurses him back to health. Rikki soon makes friends with Darzee, a bird that lives in the garden, and Chuchundra, a muskrat. These two tell Rikki of a great menace that has recently arrived – Nag and Nagaina, two huge cobras that have moved into the garden and view humans as mortal enemies. After Nagaina kills Anna's mother as she sits rocking their newborn baby, Rikki vows to defend the family. Several tense battles ensue, one that sees Rikki nearly killed from a bite by Nag, and another in which Nagaina is killed by Rikki as she moves to strike Anna in her sleep. The climactic scene involves a confrontation between Rikki and Nag, where it takes the combined efforts of Rikki, Chuchundra and Anna to trap and eliminate the mighty predator.

Talent	Role	Type
Cuba Gooding Jr.	Rikki-Tikki-Tavi (Voice)	Support
Hallie Kate Eisenberg	Anna (Voice)	Support
Tim Allen	Chuchundra (Voice)	Support
Roseanne Barr	Nagaina (Voice)	Support
Regis Philbin	Nag (Voice)	Support

Director: Stanley Eider

Cost: $65 million

Screenplay Profile

<u>Title</u>: *Sex Ed*

<u>Genre</u>: Comedy

<u>Audience</u>: Diverse

<u>Plot Summary:</u>

When the class valedictorian becomes pregnant, all hell breaks loose at a small suburban high school. Instigated by a student advocate and the local Planned Parenthood, a push is made to teach sex education in the classroom and sell condoms on school property. In response, a colorful coalition of parents and community organizations unites to stop the initiative. Enjoying the uproar is an odd collection of students. One student decides to make a profit from it and comes up with increasingly hilarious ways of marketing condoms and other forms of birth control. Caught in the middle is the pot-smoking principal, who hangs out with a pack of stoner students behind the school and gets advice from them but always manages to miss their point. The clueless PTA president doesn't quite understand anything and overreacts to everything. In the end, the proponents agree to allow the students to decide and there is a vote in the gymnasium. Before the votes are tallied, the valedictorian announces that she isn't really pregnant and that the whole thing was an experiment for a term paper in her health class. To top it off, the reactionary leader of the right-wing parents is caught having an affair with a homosexual teacher at the school. The movie takes shots at moralistic zealotry on both sides of the issue.

Talent	Role	Type
Natalie Portman	Valedictorian	Lead
Christina Ricci	Student advocate	Lead
Cheech Marin	Principal	Support
Andy Dick	PTA President	Support
Richard Simmons	PE Teacher	Support

Director: Barry Levinson

Cost: $29 million

Screenplay Profile

<u>Title</u>: ***Welcome to My Room***

<u>Genre</u>: Comedy

<u>Audience</u>: Diverse; families

<u>Plot Summary</u>:

Charming, nine-year-old Ben Murray loves movies and decides he wants to make one about his family, so he "hires" Nicollette, a six-year-old neighbor girl who never speaks, and the two make a documentary about Ben's life with the family's camcorder. They interview Ron and Sandy, Ben's parents, as well as Ben's 13-year-old brother Andy, his 16-year-old sister Natalie, and the many different pets in the Murray household. The movie portrays all the classic events of suburban family life through the eyes of an innocent nine-year-old, including waking up in the morning, rushing to get ready for school, power breakfasts, waiting for the bathroom, long car trips, and torturing new babysitters. Many of the film's most humorous moments come from the lengths that Ben and faithful Nicollette go to get candid shots and interviews, waiting in cupboards, hanging upside down from a roof, barging into the bathroom during showers, and waking "interviewees" up from a deep sleep. As the film progresses, the relationship between precocious Ben and reclusive Nicollette deepens into a strong and loyal friendship. Along the way, some problems also become apparent in the Murray household, but the film showcases how the bonds of family are stronger than the stresses of modern suburban life. Ultimately, it should appeal to all members of the family through a combination of slapstick, suburban spoof, and parody of documentary film-making.

<u>Talent</u>	<u>Role</u>	<u>Type</u>
Daniel Radcliffe	Ben	Lead
Dakota Fanning	Nicollette	Lead
Anthony Edwards	Father	Support
Frances McDormand	Mother	Support
James Franco	Brother	Support
Britney Spears	Sister	Support

Director: Ivan Reitman

<u>Cost</u>: $31 million

Screenplay Profile

Title: *Fast Food*

Genre: Comedy

Audience: Diverse

Plot Summary:

Milo's is a typical fast food restaurant with the usual assortment of teenagers and retirees on their way up or down. The movie is a comic look at the slowest, most inefficient "fast food service" restaurant in the business and one thief's misfortune to come across it. There is the clueless, Gen-X counter girl; the huffing manager; and a variety of bizarre customers. Their abilities are truly tested when the restaurant is burglarized, the manager accidentally shoots himself, and the customers are taken hostage. The thief turns out to be rather distracted as he continues a running conversation with the girlfriend he's trying to impress and win back over a bad cell phone connection. Meanwhile, the staff of Milo's tries various ways to escape but each one manages to backfire in the most hilarious fashion. After several attempts to disable the robber are foiled by his dumb luck, the employees decide that food poisoning is their best bet. They finally manage to get the thief to eat something from the store and soon he is using the restroom constantly. The counter girl then convinces the thief that his constant need to use the bathroom is caused by a rare, life-threatening venereal disease that requires immediate care. In the riotous finale, the robber surrenders to the police in order to receive treatment for his "life-threatening disease."

Talent	Role	Type
Mena Suvari	Employee	Lead
Steve Buscemi	Manager	Lead
Daman Wayans	Robber	Lead
Wilford Brimley	Hostage	Support
Michael Richards	Hostage	Support

Director: Harold Ramis

Cost: $25 million

Screenplay Profile

Title: *Rio*

Genre: Drama

Audience: Adults; couples

Plot Summary:

A couple vacationing in Rio discover a body washed up on the shore in a clump of trees. After alerting the authorities, the woman is identified as a missing Washington D.C. attorney. An investigation ensues and police begin to suspect one of her political clients may be to blame. Through a series of interwoven flashbacks, the dead woman is revealed to be a high-powered lobbyist who also defended her political friends when they got into legal trouble. One of these friends was the President of the United States. Investigators uncover a relationship between the victim and the President, one that took them both to Rio on a "political" mission. As the President emerges as a prime murder suspect, the investigators are told to return home and close the case. With the government breathing down the investigators' necks, a key piece of evidence is discovered that directly links the President to the woman's death. The investigators rush home with the crucial evidence while dodging repeated attempts on their lives. The film deals with Presidential power and one investigator's unwavering commitment to discovering the truth.

Talent	Role	Type
Sharon Stone	Lobbyist/Girlfriend	Lead
Gene Hackman	Lead Investigator	Lead
Richard Dreyfuss	President	Lead

Director: Mike Nichols

Cost: $40 million

Screenplay Profile

Title: *Light Years*

Genre: Science Fiction

Audience: Diverse

Plot Summary:

In the year 2045, a tremendous explosion destroys the earth without a trace. A peaceful humanoid alien society, Yzizor, records the explosion and sends a ship to explore the mystery. On the journey, we learn what life is like in this alien civilization and see how many of the issues facing humanity were also faced (and dealt with) by another species. When the ship arrives in our solar system, it begins piecing together the events. Once disdainful of humanity, the aliens become sympathetic as they learn more. In a shocking moment, the investigating race discovers that the earth was destroyed on purpose by the concurrent agreement of the Federated World Government in order to pre-empt an invasion of earth by another alien society located within the earth's solar system. Eventually, the alien society is traced to one of Neptune's moons and the Yzizar ship heads there, hoping to discover what could possibly have been so awful that the earth would be blown up in self-defense. In the climax of the film, a bizarre, disjointed encounter occurs between the two alien societies, after which the Yzizarian ship is destroyed when its crew sets their computer to self-destruct. Light years later, fragments of the encounter are picked up on Yzizar by the horrified planet that knows only a little more than it did before. Will employ cutting-edge special effects.

Talent	Role	Type
Len Randall	Alien Commander	Lead
Jason Owens	Alien Security Director	Lead
Amber Valletta	Alien Anthropologist	Lead

Director: Ridley Scott

Cost: $90 million

Screenplay Profile

<u>Title</u>: ***On Campus***

<u>Genre</u>: Documentary

<u>Audience</u>: Older teens; young adults

<u>Plot Summary</u>:

Shot as a pseudo-documentary, this film follows a group of five college students from their high school graduation through four years at Southern Illinois University. We meet each individual and their families in the early part of the film as the students head off for college. Through the beginning of their experiences, we watch as they struggle with independence, relationships, choosing a career, and the temptations of the modern college campus. We see candid shots of dorm life, behind-the-scenes classroom behavior, one-night romances, drinking parties, and interpersonal conflicts. Woven into the film are frank interviews with the focal individuals discussing choices, morals, and personal growth. The movie follows these people to the conclusion of their college careers: two individuals drop out, one finishes but becomes disillusioned with life and commits suicide, one goes on to graduate school, and one graduates and gets her dream job. The movie ends with a series of comments and reactions from the students' parents and friends on how the college experience affected and shaped their lives.

<u>Talent</u>	<u>Role</u>	<u>Type</u>
Tom Skelton	Chad	Lead
DeWayne Stevens	Marcus	Lead
Emily Cryton	Tonya	Lead
Teri Miller	Roxanne	Lead
Ronda Nelson	Amy	Support

Director: Neil LaBute

Cost: $12 million

Screenplay Profile

<u>Title</u>: *Renegade*

<u>Genre</u>: Science Fiction

<u>Audience</u>: Diverse

<u>Plot Summary</u>:

It's the year 2192. Todd McCullock, a CIA agent returning from a three-year overseas assignment, comes back to find that no computer files have been added or modified in several months, that no one has been hired or fired, and that everyone is just a little…different. When he tries to explain the strange events, no one believes him but he is first asked, then ordered, then almost forced to take a new psychoactive drug supposedly developed while he was away. After witnessing a bizarre mating ritual between two former friends, Agent McCullock realizes that everyone in the agency is an alien life form. Through some frantic research, he also learns that the infiltration extends to the highest levels of government. In the process, he discovers another "renegade," Agent Jones, who he rescues as she is being prepared for assimilation. Together, the two set out to publicize the conspiracy but learn that there is no chance to stop it and must flee through the streets of D.C. in order to escape with their lives. Meanwhile, the aliens, led by the mysterious Agent Palmer, steadily close in. After a tense, paranoia-inducing walk through the airport, a harrowing chase ensues across several continents. Eventually, Agents McCullock and Jones manage to flee to the mountains of Ecuador and hole up in a cave. In the final scene, we learn that the aliens can also replicate creatures, as a fly on the wall of the cave sends word of the humans' location. The movie ends with a fade-out on the first horrifying look at Agent Palmer's true face.

<u>Talent</u>	<u>Role</u>	<u>Type</u>
Kevin Bacon	Agent McCullock	Lead
Jessica Alba	Agent Jones	Lead
Gene Hackman	CIA Director	Support
Goran Visnjic	Agent Palmer	Support

Director: Joel Schumacher

Cost: $38 million

Screenplay Profile

<u>Title</u>: ***Hoover***

<u>Genre</u>: Documentary

<u>Audience</u>: Adults

<u>Plot Summary</u>:

Chronicles the rise and fall of J. Edgar Hoover as head of the Federal Bureau of Investigation. The story begins in the early days with the appointment of Hoover to the head of the FBI and documents the extraordinary influence he had on American politics through the threat of blackmailing his partners and adversaries. The early part of the film deals with Hoover's obsessive crusade against organized crime and his rising influence with U.S. Presidents. As his reputation with working-class America rises, so does his arrogance and feeling of total control. The middle of the film shifts gears to depict Hoover's downfall through his emergence as a homosexual and his obsession with cross-dressing. The end of the film depicts his efforts to acquire "dirt" on numerous public figures in America and the consequences of those actions. In the end, Hoover is brought down by his excesses and dismissed by President Nixon. The movie examines the notion that power corrupts and should prove enticing as a "behind-the-scenes" tarnishing of an American legend.

Talent	Role	Type
John Goodman	J. Edgar Hoover	Lead
Warren Beatty	John F. Kennedy	Support
Charlize Theron	Marilyn Monroe	Support
Robert Deniro	Al Capone	Support
Ving Rhames	Martin Luther King	Support

Director: Milos Forman

Cost: $55 million

Screenplay Profile

<u>Title</u>: *The Shysters*

<u>Genre</u>: Comedy

<u>Audience</u>: Diverse

<u>Plot Summary</u>:

A trio of con artists (two men and a woman) decides to try to make money by creating their own church, a "Near-Far Eastern" combination of Buddhism and Christianity. The plan is to scam money with a bogus fund-raiser supposedly intended to raise cash for a new church building. One of the three takes on the role of pastor of the fake religion; another creates a variety of outrageous religious artifacts for sale; and the third bills himself as an "Eastern Guru," healing the sick and performing exorcisms. Much to their chagrin, the ministry grows in popularity and they become increasingly uneasy with their deception. To make matters worse, the Eastern Guru then falls in love with one of the parishioners and begins to have doubts about the hustle. In a touching scene where a couple comes seeking a miracle for their dying child, the pastor feels ashamed as he looks into the pleading eyes of the parents who have walked from miles away because they had a half-off coupon for one miracle, good only for that day. The pastor cannot go through with the sham and simply says a genuine prayer for the child without charging the parents. Miraculously, the child gets better and, after this, things change. The trio takes steps to legitimize their religion and the guru ends up getting married in the "bogus" church that he helped establish. The movie ends with a hilarious Near-Far Eastern wedding ceremony with all the townspeople in attendance. The film starts out as a parody and ends up being a feel-good movie, all the while taking a penetrating look at the nature of faith and the behavior it inspires.

<u>Talent</u>	<u>Role</u>	<u>Type</u>
Will Ferrell	Church Pastor	Lead
Uma Thurman	Living Saint	Lead
Bill Murray	Eastern Guru	Lead
Elizabeth Hurley	Spiritual Advisor	Support

Director: Robert Zemeckis

Cost: $37 million

Screenplay Profile

Title: *Chosin Reservoir*

Genre: War

Audience: Diverse

Plot Summary:

November 1950. Winter approaches as U.S. troops chase the fleeing remnants of the North Korean army towards the Chinese border. Without U.S. intelligence finding out, the Chinese somehow manage to sneak 300,000 "volunteer" troops into North Korea to bail out their ally, and they lay in wait in the mountains along the Chinese-Korean border. Straining to finish the war and chasing a beaten foe, U.S. troops press on into the hills as temperatures dip well below freezing. As the U.S. forces reach the Chosin Reservoir high in the mountains, the Chinese spring the trap. U.S. forces in the area are separated by the massive reservoir – Marines to the west, U.S. Army forces to the east – and outnumbered over 5:1. The Chinese armies overrun the forward U.S. outposts and swarm around the forces on both sides of the Reservoir, all but surrounding them. The Marines to the west maintain their cohesion and conduct a long retreat in the swirling snow and freezing temperatures, miraculously managing to extricate themselves in good order without leaving any dead or wounded behind. When the Marine commander is asked by the press if the Marines are actually retreating, the commander gruffly replies that they are not retreating, simply "advancing to the rear." The U.S. Army division to the east of the reservoir is not so lucky – the unit disintegrates and is overrun, the end coming as Chinese troops catch a long column of retreating vehicles filled with wounded soldiers and systematically set fire to each one. A realistic war film, the movie calls attention to one of the most ferocious and little-known battles of the Korean War.

Talent	Role	Type
Tom Berenger	Sgt. Mino	Lead
Vin Diesel	Lt. Hathaway	Lead
Chris O'Donnell	Pfc. Reynolds	Lead
Nick Nolte	General Smith	Support

Director: Simon West

Cost: $46 million

Screenplay Profile

<u>Title</u>: ***The Reactor***

<u>Genre</u>: Action/Adventure

<u>Audience</u>: Diverse

<u>Plot Summary</u>:

A nuclear reactor near a small town in Arizona begins to leak and by the time it is discovered, the leak is virtually out of control and there is danger of a core breach. A panic ensues as order collapses and the town spirals into mob rule. A team of experts from the Nuclear Regulatory Commission is flown in to try to save the reactor and, failing that, to get as many people to safety as possible. Entering the town, the relief team is attacked by a group of hysterical citizens convinced that the team has come to cover up all traces of the disaster and make sure that none of the townspeople get out alive to tell others. Meanwhile, people are dying one-by-one in a gruesome fashion as the radiation continues to ooze out of the leak. The NRC team is kept constantly on the run while they try to help those they can and get to the reactor. Eventually they learn that a group of citizens led by a psychotic madman has taken over the reactor and is trying to facilitate a core breach to "cleanse" the area of undesirables and pave the way for a new civilization. Outside, another group of crazed citizens is trying to batter their way in. In the climactic finale, the team arrives in time to fight through the mob, take out the tyrant, and stop the core breach just before the reactor blows up. Many special effects.

Talent	Role	Type
Samuel L. Jackson	NRC team member	Lead
Kevin Spacey	NRC team member	Lead
Catherine Zeta-Jones	NRC team member	Lead
Dennis Hopper	Vault Tyrant	Support

Director: Ron Howard

Cost: $67 million

Screenplay Profile

<u>Title</u>: *Air Cav*

<u>Genre</u>: War

<u>Audience</u>: Adults; young males

<u>Plot Summary</u>:

Based on the book <u>We Were Soldiers Once…and Young</u>. Depicts the first major engagement in Vietnam between the U.S. and North Vietnamese regulars. U.S. troops of the 1st Cavalry (Airmobile) land behind enemy lines in the Central Highlands, right next to a massive NVA base camp. The landing force is attacked and a ferocious fight ensues over possession of the landing zone. Nearby, in a second battle, another force of U.S. troops lands unopposed but is ambushed while attempting to march overland through difficult terrain to come to the aid of the first unit. The second unit is surrounded and divided, with groups cut off from one another and forced to endure a long night in the jungle as NVA soldiers move around the perimeter, killing wounded U.S. soldiers in the dark. After a final ferocious assault is beaten back at dawn, the NVA slip away and the remaining U.S. troops in both units suddenly find themselves alone in the silent jungle. The movie takes a hard look at U.S. thinking early in the war, the reality of actual combat, the heroism of selected individuals, and the subsequent effort to hide the closeness of the outcome and spin the battle as a major U.S. victory.

Talent	Role	Type
Edward Norton	Sgt. Cassidy	Lead
Keith David	Major Wilson	Lead
Eriq La Salle	Lt. Raines	Lead

Director: Wolfgang Peterson

Cost: $49 million

Screenplay Profile

<u>Title</u>: ***Line of Duty***

<u>Genre</u>: Action/Adventure

<u>Audience</u>: Diverse

<u>Plot Summary</u>:

Gangs are over-running Newark, New Jersey, and the drug problem has gotten so bad that a special task force composed of the nation's premier undercover cops has been brought in. This task force is charged with bringing down one of the most powerful drug lords in the world. The members of the task force go undercover as small-time dealers in order to gain access to the leader of the drug cartel. During a routine sale, one of the undercover cops is identified, putting the entire operation in danger. The task force members are warned, except for one woman who is so deep undercover that she can't be reached. As she unknowingly struggles to get to the top of the cartel, she battles corruption in the city government and the police department, as well as the cartel's ever-growing suspicion that she is a cop. The movie builds to an extended chase through the city and a cat-and-mouse search through the sewer system. In the climactic scene, one of the task force cops must shoot the undercover female officer and accidentally kills her. Before she dies, the female officer saves the lives of the other task force cops by spotting and shooting the drug lord who is about to open fire with an automatic weapon.

Talent	Role	Type
Jennifer Lopez	Undercover Cop	Lead
Chris Rock	Task Force Cop	Lead
Josh Hartnett	Task Force Cop	Lead
Jackie Chan	Drug Lord	Support

Director: Brett Ratner

Cost: $46 million

Screenplay Profile

Title: *The Devil Made Me Do It*

Genre: Suspense

Audience: Diverse

Plot Summary:

Dean, a high-school age boy, lives in a perfect suburban world. He has a nice family, a wonderful girlfriend, and a seemingly normal life. Dean hears voices, though, and as things begin to go wrong in his life, the voices become increasingly frustrated, angry, and vengeful. Dean begins to act cruelly towards others and take delight in making things suffer. Provided information by the voices, he torments his mother with hints about an old affair and his father with allusions to his cowardice during Vietnam. Dean experiments with pain and death using stray pets from the neighborhood and, in a shocking scene, performs a real amputation on a neighbor girl while they are playing "doctor." In between these actions, though, he is a charming boy filled with shame, doubt, and vulnerability – and only vague recollections of the awful things he has done. After confiding in his older brother, a psychiatrist is brought in to learn the nature of the voices. Following a number of clever verbal sparring matches with the psychiatrist, the boy is pronounced psychotic and placed on medication. This does not stop the boy, who plans and conducts an assault on his local high school. The movie ends in the midst of an execution-style killing spree, leaving in doubt the issue of whether the boy has psychotic problems or is truly being manipulated by evil spirits.

Talent	Role	Type
Elijah Wood	Dean	Lead
Morgan Freeman	Teacher	Lead
Anna Paquin	Girlfriend	Lead
Edward James Olmos	Psychiatrist	Support

Director: Jonathan Glazer

Cost: $25 million

Screenplay Profile

Title: *Oil and Water*

Genre: Comedy

Audience: Families; kids

Plot Summary:

A successful female lawyer with a 15-year-old daughter falls in love with a male cop who has a 16-year-old son. Unfortunately, the two teens were the hottest couple in school until a recent break-up. Although it has been three months, the two teens hate one another and are not thrilled about their parents' deepening relationship. As tensions rise between the teens, the lawyer and cop get married and the two teens must endure the many trials and tribulations of living together under the same roof. After an all-out fight in the swimming pool, the two teens decide to join forces temporarily in an attempt to sabotage the marriage and force their parents into getting a divorce. After some comic blunders, the parents discover the teens' plot and decide to pull a scheme of their own to get the kids to see that they still care a great deal about one another. The parents stage a huge fight, leading the teens to admit their scheme in a desperate attempt to stop the "violence." To the shock of the teens, the parents then admit that they were only acting. In the final scene, the audience sees the bustling household of their "normal" family.

Talent	Role	Type
Sandra Bullock	Wife	Lead
Dennis Quaid	Husband	Lead
Hayden Christensen	Son	Lead
Katie Holmes	Daughter	Lead
Cameron Diaz	Ex-wife	Support

Director: Chris Columbus

Cost: $23 million

Screenplay Profile

Title: *The Wolf's Lair*

Genre: Drama

Audience: Adults

Plot Summary:

In July 1944, a group of conspirators inside the Third Reich recognizes that the war is lost and Hitler's insanity will lead to Germany's ruin. Delicately, the conspirators, led by a charismatic German officer named Colonel von Stauffenberg, weave an intricate plot to assassinate Hitler. The tension builds as plans proceed then fizzle, until a golden opportunity arises and Colonel von Stauffenberg is invited to one of Hitler's meetings at the Wolf's Lair in East Prussia. Stauffenberg brings a briefcase containing a time bomb, manages to smuggle it in, place it under a table next to Hitler, activate it, and leave. The conspirators prepare to take over power with the intention of ending the war. Tension builds throughout the meeting, symbolized by Hitler's increasingly agitated behavior. Ultimately, the bomb goes off and kills a number of people – but Hitler is only wounded, not killed. Efforts to seize control of the government are thwarted by a radio message that Hitler is still alive, and the conspirators are ferreted out, brutally tortured, and executed. The movie focuses on the desperation of the conspirators, the odds they face in a totalitarian regime, and ultimately the question of how the war would have been affected if Hitler had been killed shortly after D-Day.

Talent	Role	Type
Liam Neeson	Colonel von Stauffenberg	Lead
Jeremy Irons	Adolf Hitler	Lead
David Hyde Pierce	Gestapo Commander	Support
Nastassia Kinski	Hitler's Secretary	Support

Director: William Friedkin

Cost: $44 million

Screenplay Profile

<u>Title</u>: ***Extrapolation***

<u>Genre</u>: Horror

<u>Audience</u>: Teens; young adults

<u>Plot Summary</u>:

On Halloween 2000, a group of teens plays a popular computer game, "Diablo II," before leaving for school. The opening scenes of the movie show the group playing the game with gusto and sinking into their characters, becoming completely immersed in the final battle against the title character. For a single instant, they all lose track of reality, and their belief opens a portal to the netherworld. In the game, they kill the demon and witness a gory cut-scene finale that serves as an omen of things to come. Afterwards at school, strange things begin to happen and several people are killed in very bizarre ways. As the movie goes on, we learn that the original Diablo (in the first version of the game) escaped death by moving into the body of the character that tried to kill it. It appears that the same thing is happening again, only the demon has escaped from the game into the real world. One of the group figures out what is happening and proceeds to recruits a frail old man to fight the boy who has become possessed. Using their knowledge from the game, they eventually search out the demon in the midst of trick-or-treating and destroy it in the same manner as the demon was killed at the end of the game.

<u>Talent</u>	<u>Role</u>	<u>Type</u>
James Franco	Possessed Teen	Lead
Keri Russell	Teen Player	Lead
Alyssa Milano	Teen Player	Support
Martin Landau	Neighborhood Parent	Support

Director: Stephen King

Cost: $27 million

Screenplay Profile

Title: *Degeneration*

Genre: Horror-comedy

Audience: Diverse

Plot Summary:

In 2004, the U.S. begins closing down research programs initiated at the height of desperation during the Cold War. At a top-secret research laboratory in Colorado, orders come through to suspend the activities of Project Big Bang, a biological warfare super-virus intended for covert insertion into the water supply of enemy nations as a last resort. The virus rapidly eats away exposed flesh and then moves on to the central nervous system, causing its victims to lose higher thought and reasoning processes. While shutting the laboratory down, an accident exposes members of the town to the toxin. Unfortunately, the victims don't die, but become walking zombies ruled by animalistic thought processes and characterized by extreme fury towards normal humans. A series of bizarre murders and mysterious deaths occur with increasing rapidity, until only a few brave citizens are left fighting a furious horde of infected "zombies." As the movie reaches its climax, the zombies corner the remaining citizens in the underground research facility and launch an all-out assault through sewers, ventilation ducts, windows and doors. Armed with only a few automatic weapons, the citizens fight back. The gruesome showdown leaves the winner in doubt right up to the very end.

Talent	Role	Type
Linda Fiorentino	Project Director	Lead
Kurt Russell	Vacationer	Lead
Ray Romano	Mortician	Support
Jaime Foxx	Town Barber	Support

Director: John Carpenter

Cost: $51 million

Screenplay Profile

<u>Title</u>: ***A Good Day to Die***

<u>Genre</u>: Drama

<u>Audience</u>: Diverse; adults

<u>Plot Summary</u>:

A family man begins having visions of his own death. Afraid to die, the man is terrorized by the knowledge. He becomes depressed and quits his job. He tries to talk to his wife who is sympathetic at first but grows increasingly frustrated with his preoccupation. In one scene, he makes a long rambling speech to his wife and looks up to see tears pouring down her face; the next day, she vanishes without a trace. Terrified and alone, the man concocts a variety of plans to circumvent his death and grows increasingly frantic as the visions continue. After failing in a suicide attempt, the man accepts his fate and decides to make good use of the time he has left. He sells his house, cashes his savings, and gives all the money to the homeless. He donates as much blood as he can, and then gets in the car and simply starts driving. When he spies a woman having car problems by the roadside, he stops and offers his car. Meanwhile, his wife has changed her mind and returns to the house in tears, searching for him. In the next scene the man is lying dead in a ditch by the road, with evidence of having been severely tortured. The question of whether or not the man died the way he feared and whether he knew it was coming is left unresolved. However, as the camera pans back, the faintest hint of a smile can be seen on his face.

Talent	Role	Type
Tom Hanks	Husband	Lead
Jennifer Connelly	Wife	Lead
Alan Alda	Boss	Support
Madonna	Stranded Woman	Support

Director: Ang Lee

Cost: $42 million

Screenplay Profile

Title: *Southern Accents*

Genre: Drama

Audience: Couples; females

Plot Summary:

This movie shows 10 years in the life of a young Southern girl, born and raised in a town of less than 300 people by her Bible-thumping, conservative parents. The movie opens with scenes from the girl's childhood showing how her parents continually suppressed her freedom and spirit. However, the girl clearly has talent and decides to use education as a way of getting out. She distances herself from her parents and their restrictions and, although forbidden to date until she reaches 18, meets an older boy from the other side of the tracks and they eventually fall in love. They sneak around together, dreaming about another life somewhere far away from the small town. When their relationship finally turns physical, the girl gets pregnant. Terrified of her family's reaction, she ends up having an abortion, causing her boyfriend to leave. Even worse, her father discovers what has happened and immediately disowns her. Kicked out of the house, she lives in the garage of an estranged family member and struggles to put her life back together, all the while suffering intensely from hallucinations in which she sees her aborted child playing happily with a sibling. Eventually, her boyfriend realizes he has made a mistake and returns to her life. In the final scene, they confront her parents together and a grim staring contest turns into a shouting match and then into a tearful reconciliation. The movie ends with a shot of the girl delivering a second child while her husband busily scrambles to capture the happy moment on videotape.

Talent	Role	Type
Eliza Dushku	Girl	Lead
Heath Ledger	Boyfriend	Lead
Robert Duvall	Father	Support
Ann Margaret	Mother	Support

Director: Mimi Leder

Cost: $23 million

Screenplay Profile

Title: ***Murder.com***

Genre: Suspense

Audience: Teens; males

Plot Summary:

Sam Kurtis, a psychotic sociopath and connoisseur of cyberspace, has taken to picking up lonely women in chat rooms. He derives joy from eventually meeting them in person and breaking their heart, but then he meets Sara. They hit it off and have an intense relationship through their computers, but Sara eventually decides she is not interested and ends the relationship. Sam is crushed and becomes very angry, the trauma pushing him over the brink into madness. He begins spending 24 hours a day in the chat rooms in the vain hope of finding Sara. Along the way, he convinces many women to meet him and then brutally murders them. Phillip Kent, an FBI agent leading the investigation, decides that someone will need to go undercover to lure the killer out in the open. Agent Rachel Brown is called in to make contact with Sam. She ends up in the same chat room with him and they agree to meet, but problems arise and the police are unable to prevent him from abducting Rachel and getting away. Attempting to buy time, Rachel persuades Sam that she is actually the Sara he is looking for, and draws him into a game where she will try to seduce him and win him back in the online chat room where she ended the relationship. Frantically monitoring the chat rooms at FBI headquarters, Agent Kent figures out what is going on by piecing together clues sent by Agent Brown, and the FBI arrives just in time to arrest Sam as he prepares to kill Rachel at the conclusion of her seduction.

Talent	Role	Type
Ethan Hawke	Sam Kurtis	Lead
Elisabeth Shue	Rachel Brown	Lead
Donal Logue	Phillip Kent	Lead

Director: Bryan Singer

Cost: $26 million

Screenplay Profile

Title: *Malled*

Genre: Romantic Comedy

Audience: Teens; couples

Plot Summary:

This movie follows the zaniness of American life as seen through the lens of the typical suburban mall. The plot unfolds as a low-key romance develops between 17-year-old Kerry, a new employee at the pet store, and Manny, a Hispanic kid who also works at the pet store and is one of the most popular people at the mall. As the days go by, their relationship deepens but then the stresses of an inter-racial relationship set in and become too great, so they decide to split. Of course, they soon realize they have made a mistake, but their reconciliation is impeded by the bizarre owner of the pet store, the long-winded food court manager, a nerdy gang leader, and a compulsive mall walker who is always in the wrong place at the wrong time. The lovers eventually realize that they make a pretty good team and open their own clothing store at the mall. The movie takes shots at the many stereotypes of people found in malls, as well as the difficulties of cross-racial dating.

Talent	Role	Type
Denise Richards	Kerry	Lead
Freddie Prinze, Jr.	Manny	Lead
Cheri Oteri	Pet Store Owner	Support
Ice-T	Gang Leader	Support
Billy Crystal	Food Court Manager	Support
Rosie O'Donnell	Mall Walker	Support

Director: Garry Marshall

Cost: $20 million

Screenplay Profile

<u>Title</u>: ***The Caddy***

<u>Genre</u>: Drama

<u>Audience</u>: Adults

<u>Plot Summary</u>:

Aidan is a recently turned golf pro dealing with all the stress and pressures of trying to make it big. He spends his days, rain or shine, on the course, hitting ball after ball to perfect his swing. The two things that he makes time for are women and his lifelong friend and caddy, Eric. The first part of the film chronicles Aidan's many brief affairs with women who follow him on tour. In a moment of weakness, he falls for one, they marry, and soon have a daughter by accident. The stress of the professional circuit and the new child rapidly sour the relationship and the breaking point comes when Aidan decides to play in a tournament on their five-year anniversary. Aware all along that something was not quite right, his wife files for divorce and leaves. He is initially devastated but through many low-key talks with his friend, the caddy, Aidan begins to realize that his approach to relationships – all relationships – has been very self-serving. In a climactic scene where the two endure a ferocious rainstorm to finish a round, Aidan realizes that he loves Eric and that his friend has been patiently waiting for him all along. The film traces the path of personal discovery and the difficulties of being true to oneself.

<u>Talent</u>	<u>Role</u>	<u>Type</u>
Matt Damon	Golf Pro	Lead
Ben Affleck	Caddy	Lead
Amanda Peet	Wife	Support

Director: Sam Mendes

<u>Cost</u>: $26 million

Screenplay Profile

<u>Title</u>: *My Lai*

<u>Genre</u>: Action/Adventure

<u>Audience</u>: Diverse

<u>Plot Summary</u>:

Based on the real-life massacre of a Vietnamese village by U.S. troops in 1968. Led by Lt. William Calley, U.S. troops belonging to C Company, "Americal" Division, enter the village of My Lai (pronounced "Me-Lie") on a routine "search and destroy" mission and ending up killing over 400 people. The movie begins by depicting the training of the unit, its deployment to Vietnam, and its increasing frustration and hatred toward Vietnamese civilians stemming from the continual loss of life in and around Vietnamese villages. The movie focuses on the triggering events that led to the first civilian deaths, the spread of the killing mindset, and the choices that individual soldiers had to make about their participation in the killing. The first half of the movie details the actions of Lt. Calley, Sgt. Menken (a soldier who refused to participate and tried to stop the killing), and Nee Wa Gin, a young Vietnamese peasant who led a group of villagers in their attempt to first hide, then escape, from the village. The second half of the movie highlights alleged efforts by the Army to hide the massacre from the American people, as well as the resulting trial in which Lt. Calley was acquitted of murder.

Talent	Role	Type
Tobey McQuire	Sgt. Menken	Lead
James Marsden	Lt. Calley	Lead
Denzel Washington	Capt. Rand	Lead
Michelle Yeoh	Vietnamese villager	Lead

Director: Oliver Stone

Cost: $63 million

Screenplay Profile

<u>Title</u>: ***We, The People***

<u>Genre</u>: Science Fiction

<u>Audience</u>: Diverse

<u>Plot Summary</u>:

In the year 2012, there is no longer a foreign threat to the United States. On the home front, airlines, businesses and whole cities are increasingly threatened by domestic terrorists. After terrorists explode a tactical nuclear warhead in Pittsburgh, a hard-line President is elected and Congress passes several emergency laws that drastically limit the rights of individual citizens to possess the "means of mass destruction." Citizens are not allowed to possess weapons of any kind, militia are deployed in all major cities, and every electronic transmission is monitored. Rioting begins, martial law is declared, and an underground resistance movement arises. After an attempt to trap the terrorists takes place, the enraged group sets off another nuclear bomb that obliterates Miami. As the problems continue, Congress is disbanded and the President and her cabinet take control of the government. Meanwhile, the terrorists are located in Atlanta and National Guard units conduct a ruthless house-to-house search during which numerous atrocities are committed on both sides as the citizens desperately resist. In the end, the country collapses and lawlessness spreads through the cities. The movie follows the government, terrorists, and the citizens' resistance and examines when the ends justify the means.

Talent	Role	Type
Sigourney Weaver	President	Lead
Russell Crowe	Terrorist	Lead
Charles Dutton	Resistance Leader	Lead
Dennis Franz	National Guard Commander	Support

Director: Michael Mann

Cost: $72 million

Screenplay Profile

Title: *Scranton*

Genre: Horror

Audience: Teens

Plot Summary:

The scene is set in a small coal-mining town in Pennsylvania. A group of local children are playing around the coal mines against their parents' orders. One of the children, Sean, finds a small passageway into one of the mines and the children decide to investigate and don't come out. The parents of the children call a town meeting and organize a search party, but in the midst of discussion an older woman rises to speak. She says that, years ago, a coal miner went crazy and began kidnapping children and killing them within the confines of the coal mine. A group of parents went to the coal mine to seek revenge for their children and murdered the worker, and since that day people have said that his ghost remains in the coal mine. The old woman offers to lead the assault on the ghost, arguing that she is the only one that can do the job. A tense battle in the blackness of the caves gradually reveals the gruesome fate of the children. Most of the parents meet a similar fate but, in the end, the old woman destroys the murdering ghost, who turns out to be her father.

Talent	Role	Type
Kiefer Sutherland	Parent	Lead
John Malkovich	Ghost	Lead
Haley Joel Osment	Sean	Lead
Gloria Stuart	Old woman	Support

Director: Sam Raimi

Cost: $45 million

Screenplay Profile

Title: ***The Colony***

Genre: Science Fiction

Audience: Diverse

Plot Summary:

In 2119, a spaceship from over-populated Earth departs for a far-away solar system on a colonization mission. On the way to an ideal planet, a civil war erupts on the colony ship and the spacecraft is forced to land on a barren and hostile planet. Two factions emerge, one basically good and the other evil. Spilling out of the ship, the two sides struggle against each other and the hostile environment. The planet has a tremendous gravitational pull that makes movement grotesque, a poisonous atmosphere that results in death with any breach of spacesuit integrity, and a hostile alien species that lives off human brain matter. A three-way war ensues, with the evil faction learning to communicate with the aliens and attempting to partner with them. In a brutal encounter, members of the evil faction are ambushed and wiped out by the double-crossing aliens. The aliens then turn on the good faction and threaten to overrun the colony, but the humans win a pitched battle when the central hive is destroyed by one of the few remaining humans who manage to infiltrate the alien defenses. As the battle ends, a relief ship arrives and takes away the survivors, who have mixed feelings about abandoning the planet. Loaded with special effects.

Talent	Role	Type
Ed Harris	Ship Commander	Lead
Ashley Judd	Co-leader of Good faction	Lead
Mark Wahlberg	Co-leader of Good faction	Lead
Gary Sinise	Leader of Evil faction	Lead
Sarah Michelle Gellar	Stowaway	Support

Director: John McTiernan

Cost: $81 million

Screenplay Profile

<u>Title</u>: *Hearts & Minds*

<u>Genre</u>: Drama

<u>Audience</u>: Couples; women

<u>Plot Summary</u>:

A female attorney at a large law firm has her sights set on the ultimate career objective – becoming a partner in the firm. The early portion of the film establishes the woman's superb credentials and demonstrates her ability to develop relationships with important clients. Although the woman doesn't realize it, she poses a threat to the old boy's network at the top and they decide to force her out. Even more than before, she finds herself exposed to cruel pranks and jokes, and physical intimidation by many coworkers with whom she had been friends. She is pulled off important cases, loses her office, and has her salary cut in half. With no one to turn to, she finally enlists the aid of her separated husband -- the only lawyer who believes in her, even though they can barely stand one another. Working together, the two begin to build a massive gender discrimination case. At first they can hardly communicate and every conversation turns into an argument as old wounds surface. After working in silence broken by many small moments, they slowly find themselves yearning to get back together – which they ultimately do. In the climactic scene, the woman tricks her boss into admitting everything, but realizes that she no longer wants to work for the firm. Although they can prove their case and win in court, they drop it – after arranging for the female attorneys at the firm to file a class-action lawsuit.

Talent	Role	Type
Rose McGowan	Rising Attorney	Lead
Jude Law	Estranged Husband	Lead
Brian Dennehey	Firm Partner	Support
Donald Sutherland	Firm Partner	Support
Peter Coyote	Firm Partner	Support

Director: Steven Soderbergh

Costs: $32 million

Screenplay Profile

<u>Title</u>: ***1-900***

<u>Genre</u>: Drama

<u>Audience</u>: Couples; older men

<u>Plot Summary</u>:

The movie opens with a man and a woman planning their wedding. However, at the last minute, the woman decides she doesn't want to get married and leaves the man at the altar. Utterly dejected, the man turns to 1-900 numbers to console his grief. After many explicit conversations with various phone sex operators, the man begins to fall in love with a young operator on his favorite line. The man and woman engage in some steamy conversations and the man becomes increasingly enraptured. Through illegal means, the man learns of the woman's real name and address. He begins to follow her and becomes obsessed with meeting her. Eventually he meets her and seduces her. In the process, he learns that she has been equally infatuated with him, has been having him followed, and knows he has become obsessed with her. This initiates a kinky affair that plays out regularly at the woman's apartment as she takes calls from her clients. The routine works so well that they eventually decide to get married and go into a specialized niche of the phone sex business.

Talent	Role	Type
Angelina Jolie	Phone Sex Operator	Lead
Dylan McDermott	Caller	Lead
Penelope Cruz	Roommate	Support

Director: Jean-Jacques Annaud

Cost: $18 million

SCORING KEY

Film Name	Revenue: 0	Profit: 0	Total Cost: 0	Revenue: 5	Profit: 5	Total Cost: 5	Revenue: 10	Profit: 10	Total Cost: 10	Revenue: 20	Profit: 20	Total Cost: 20
A Lifetime of Anger	38.96	18.96	20	50.65	25.65	25	60.39	30.39	30	68.18	28.18	40
Chosin Reservoir	57.52	11.52	46	74.77	23.77	51	89.15	33.15	56	100.65	34.65	66
Curious George	123.75	58.75	65	160.88	90.88	70	191.81	116.81	75	216.56	131.56	85
Degeneration	154.11	103.11	51	200.34	144.34	56	238.86	177.86	61	269.68	198.68	71
Fast Food	77.40	52.40	25	100.61	70.61	30	119.96	84.96	35	135.44	90.44	45
Light Years	221.24	131.24	90	287.61	192.61	95	342.91	242.91	100	387.16	277.16	110
On Campus	47.25	35.25	12	61.43	44.43	17	73.24	51.24	22	82.69	50.69	32
Replicant	40.57	2.57	38	52.75	9.75	43	62.89	14.89	48	71.00	13.00	58
Rio	111.60	71.60	40	145.08	100.08	45	172.98	122.98	50	195.30	135.30	60
Sex Ed	100.64	71.64	29	130.83	96.83	34	155.99	116.99	39	176.11	127.11	49
Southern Accents	77.35	54.35	23	100.55	72.55	28	119.89	86.89	33	135.36	92.36	43
Max Profit = 426.17million												
A Good Day to Die	153.46	111.46	42	199.50	152.50	47	237.87	185.87	52	268.56	206.56	62
Air Cav	93.28	44.28	49	121.26	67.26	54	144.58	85.58	59	163.24	94.24	69
Extrapolation	62.75	35.75	27	81.58	49.58	32	97.27	60.27	37	109.82	62.82	47
Hoover	153.09	98.09	55	199.02	139.02	60	237.29	172.29	65	267.91	192.91	75
Line of Duty	49.57	3.57	46	64.44	13.44	51	76.84	20.84	56	86.75	20.75	66
Oil & Water	27.00	4.00	23	35.10	7.10	28	41.85	8.85	33	47.25	4.25	43
The Devil Made Me Do It	102.90	77.90	25	133.77	103.77	30	159.50	124.50	35	180.08	135.08	45
The Reactor	163.52	96.52	67	212.57	140.57	72	253.45	176.45	77	286.16	199.16	87
The Wolf's Lair	142.00	98.00	44	184.60	135.60	49	220.10	166.10	54	248.51	184.51	64
Welcome to My Room	105.30	74.30	31	136.89	100.89	36	163.22	122.22	41	184.28	133.28	51
We, The People	222.77	150.77	72	289.60	212.60	77	345.29	263.29	82	389.84	297.84	92
Max Profit = 489.17million			0			0			0			0
1-900	51.27	33.27	18	66.65	43.65	23	79.46	51.46	28	89.72	51.72	38
Hearts & Minds	109.52	77.52	32	142.37	105.37	37	169.75	127.75	42	191.65	139.65	52
Hybreed	43.76	27.76	16	56.89	35.89	21	67.82	41.82	26	76.58	40.58	36
Malled	21.82	1.82	20	28.36	3.36	25	33.82	3.82	30	38.18	-1.82	40
Murder.com	49.49	23.49	26	64.33	33.33	31	76.70	40.70	36	86.60	40.60	46
My Lai	224.30	161.30	63	291.59	223.59	68	347.66	274.66	73	392.52	309.52	83
Scranton	30.27	-14.73	45	39.36	-10.64	50	46.92	-8.08	55	52.98	-12.02	65
The Caddy	57.78	31.78	26	75.11	44.11	31	89.56	53.56	36	101.11	55.11	46
The Colony	236.96	155.96	81	308.05	222.05	86	367.29	276.29	91	414.68	313.68	101
The Shysters	148.44	111.44	37	192.98	150.98	42	230.09	183.09	47	259.78	202.78	57
The Winner	100.24	68.24	32	130.31	93.31	37	155.37	113.37	42	175.42	123.42	52
Max Profit = 527.88million												

Appendix C
Collective Efficacy Scale

1.   I believe our team can finish the simulation in at least the top 5 teams.

        Circle one answer:
                            Yes   No
        How confident are you in this answer? _____
    Write in a number between 0 (no confidence at all) and 100 (complete confidence)

2.   I believe our team can finish the simulation in at least the top 10 teams.

        Circle one answer:
                            Yes   No
        How confident are you in this answer? _____
    Write in a number between 0 (no confidence at all) and 100 (complete confidence)

3.   I believe our team can finish the simulation in at least the top 15 teams.

        Circle one answer:
                            Yes   No
        How confident are you in this answer? _____
    Write in a number between 0 (no confidence at all) and 100 (complete confidence)

4.   I believe our team can finish the simulation in at least the top 20 teams.

        Circle one answer:
                            Yes   No
        How confident are you in this answer? _____
    Write in a number between 0 (no confidence at all) and 100 (complete confidence)

5.   I believe our team can finish the simulation in at least the top 25 teams.

        Circle one answer:
                            Yes   No
        How confident are you in this answer? _____
    Write in a number between 0 (no confidence at all) and 100 (complete confidence)

6.   I believe our team can finish the simulation in at least the top 30 teams.

       Circle one answer:
                            Yes   No
       How confident are you in this answer? _____
   Write in a number between 0 (no confidence at all) and 100 (complete confidence)

7.   I believe our team can finish the simulation in at least the top 35 teams.

       Circle one answer:
                            Yes   No
       How confident are you in this answer? _____
   Write in a number between 0 (no confidence at all) and 100 (complete confidence)

8.   I believe our team can finish the simulation in at least the top 40 teams.

       Circle one answer:
                            Yes   No
       How confident are you in this answer? _____
   Write in a number between 0 (no confidence at all) and 100 (complete confidence)

9.   I believe our team can finish the simulation in at least the top 45 teams.

       Circle one answer:
                            Yes   No
       How confident are you in this answer? _____
   Write in a number between 0 (no confidence at all) and 100 (complete confidence)

Appendix D
Team Cohesiveness Measure

Do you feel that you are really a part of your team?

_____   Really a part of my team

_____   Included in most ways

_____   Included in some ways, but not others

_____   Don't feel I really belong

Appendix E
Shared Leadership Measure

Who do you see as the leader of your team? Check all that apply.

___Self

___Team member #1

___Team member #2

___Team member #3

Appendix F
Shared Leadership Observer Rating Sheet

Team ID: _____

Performance cycle: _____

Record the behavioral frequencies below:

	Team Member A	Team Member B	Team Member C	Team Member D
Encourage others to <u>participate</u> in group activities and <u>communicate</u> with each other				
Acknowledge and **reward** team members for their contribution to the team				
Help team members **identify**, and **clarify** their understanding of, the team's common goal				
Initiate the **planning** of the course of action towards the accomplishment of the team's common goal				
Attempt to **persuade** team members to <u>agree</u> to a certain action plan				
Question or **challenge** team members' ideas; **Stimulate** thinking towards a new approach or solution				
Respect team members as individuals and **value** their contribution to the team				

Nominate leaders within this performance cycle: _____ Team Member A   _____ Team Member B   _____ Team Member C   _____ Team Member D

Appendix G
Consent Form

Title of study: Empirical examination of A Theoretical Framework on Teams
Principle investigator: Roseanne Foti, Ph.D., Associate Professor, Dept. of Psychology, Virginia Tech
Co-investigator: Jessie Huang, Graduate Student, Dept. of Psychology, Virginia Tech

I.   Purpose of this study

This study builds upon and incorporates extant research in various domains and aims to further the understanding of team processes. We aim to create and empirically test a framework that focuses on various team-level factors as well as the ensuing team outcomes.

II.   Procedures

You will first take a pre-task measure online. A selected portion of those who have completed the measure will be contacted via email for further participation in one lab session in person at a chosen date and time.

The lab session will be held in an assigned lab space on the first floor of Williams Hall. You will engage in a guided interactive team task in groups of four. During the process, you will periodically be asked to complete some questionnaires, including personality assessments and questions regarding the task process. The duration of the task is approximately three hours.

III.   Risks

You may experience some stress as a result of your engagement in the team task. The nature of the task requires you to interact with others, which may also result in discomfort in some. However, it is not foreseen to be anything more severe what you may experience during other classroom activities (e.g., team exercise or projects) and should not last beyond the conclusion of the task. However, if you experience excessive discomfort as a result of the study, we will help you seek further assistance (e.g., the counseling center).

IV.   Benefits

The results of the study will enhance our understanding of teams and have broader applications in many aspects regarding the improvement of teamwork.

V.   Extent of Anonymity and Confidentiality

Your participation is anonymous and confidential. Your name will not appear anywhere in the study. Any personal information that may reveal your identity will be removed from the data before any analysis is performed. Your response to the questions will only be analyzed and reported as part of the gross data set.

Your participation in the lab session will be video taped. However, the recordings will not be linked to any personal identification information.

All data and recordings will be secured in locked cabinets and only Dr. Foti and Ms. Huang will have access to them. Research assistants other than Dr. Foti and Mis. Huang may perform data entry and transcription under supervision. All data and recordings will be retained for five years post publication.

VI.   Compensation

You will receive extra credit for participating in this study. A maximum of four extra credit points may be earned for your participation. One point will be rewarded for taking the pre-task measure online. If you are selected for participating in the lab session, three more points will be rewarded. As an alternative to earning extra credit through participation, you may write article critiques for extra credit, or otherwise instructed in the course syllabus.

VII. Freedom to Withdraw

If at any point in the study, you do not feel comfortable continuing, you may leave without penalty. If you choose to withdraw, you will not be penalized by reduction in points or course grade. You are free not to respond to questions without penalty.

VIII. Permission

By signing below, you are voluntarily agreeing to participate in the study. I hereby acknowledge and give my voluntary consent:

_____

(Signature)

_____

(Date)

If you have any questions after the study, please feel free to contact Dr. Foti or Ms. Huang. If you wish to learn about the results of the study or obtain a copy of the study, you can also contact Dr. Foti or Ms. Huang after May, 2009. If you have questions or concerns about the conduct of this research, research subject's rights, and whom to contact in the event of research-related injury, you may also consult the contacts below. Again, thank you for your participation!

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