

# Humāntics

*The Science and Design of Sustainable Collaboration*

Fraser A. Marshall Ph.D & Justin M. Witman



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The University of the Arts  
Master of Industrial Design Program

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# Humantics -

The Science and Design of Sustainable Collaboration

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This thesis is submitted in partial fulfillment of the requirements for  
the degree of Master of Industrial Design at The University of the Arts

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## ***Thesis Statement***

By combining theory from psychology with design methods, we promote successful collaboration by designing tools to help work groups manage their weaknesses and build on their strengths.



# *Abstract*

In standard working environments, collaboration is often more difficult than it needs to be. This is because certain group anxieties associated with confusion over Language, Authority, Direction and Roles (LADR) stunt autonomous behavior, necessary for being creative. As a result, successful collaboration is difficult to achieve and the end results are often sub-optimal. This is in contrast to coworking spaces, where collaboration is frequently organic, creative and filled with less personal anxiety.

Conventional approaches to manage collaboration-induced anxieties include psychology-based workshops and self-introspective examination. Although often successful, these methods can be difficult to grasp, emotionally draining and maybe viewed hesitantly due to the stigma associated with psychology-based interventions. We demonstrate in this thesis that Humantics, which is the science and design governing sustainable collaborations, can be used to help overcome the causes of anxiety inducing behavior during collaboration.

We identified the major behavioral characteristics that make collaboration within coworking spaces successful, and applied this knowledge to the design of Humantic tools. Specifically, tools aimed at helping define group direction and purpose were designed and successfully tested with two stakeholder groups, Vizthink Philadelphia and the University of the Arts, Finance Office. We also designed a prototype collaboration tool kit that addressed many of the psychological reasons behind failure to maintain productive collaborations over time. Finally, these methods were packaged into a concise deliverable that we believe can be used to help a potentially difficult collaborative project at an academic institute.

Collectively, the results in this thesis demonstrates that Humantics offers an innovative solution for helping individuals manage their weaknesses and build on their strengths during collaboration. Through the use of designed tools, Humantics allows autonomous and interdependent behavior that encourages creative initiative, innovation and collaboration success.





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# Introduction

*Research and Influences*



# Introduction

## *Why is collaboration never easy?*

When it comes to working in groups, certain group anxieties associated with confusion over Language, Authority, Direction and/or Roles can often stunt successful collaboration. As such, the subject of this thesis is the creation of tools, which are based on managing the anxieties experienced during group collaboration. We demonstrate that design tools offer an innovative solution to helping group collaboration, and that understanding group psychology as a means to designing these tools is imperative to their success.

Groups are made of individuals and as a species, no two individual beings are identical in respect to personality and identity. Consequently, when groups come together, contradictory and confusing behavior frequently occurs, which causes conflict detrimental to the collective function of the group. This is a common occurrence in group life and is experienced by most people in businesses and organizations. Many different fields have attempted to provide answers, suggestions and methods to help people work together more effectively. However, none have yet provided the panacea to solve this problem of collaboration.

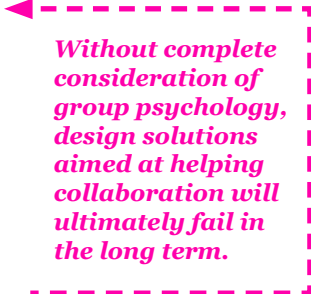
Our method of tackling this challenge is based on the three important factors:

1. An awareness of the underlying psychology influencing collaboration and group behavior.
2. The participation of groups in the design process.
3. The design of cognitive collaboration tools.

Existing models of design and consulting create solutions without taking all three factors into consideration. If not completely considered, we believe the psychology that governs the long-term success and collective purpose of the group will dissolve due to these ever-present human anxieties. However, by bringing group members into the design process, creating tools will provide the group with a method to address and manage their strengths and weaknesses during collaboration.

We call these processes **Humanitics**.

We demonstrate that cognitive tools that address the cause of group weakness provide an innovative method to help groups manage their weaknesses and build on their strengths during collaboration. These tools not only offer solutions



*Without complete consideration of group psychology, design solutions aimed at helping collaboration will ultimately fail in the long term.*

to help group members overcome their anxieties associated with group work, but also favors the development of autonomy, trust and dependencies. This allows group members to use their creative initiative and encourages sustainable and productive collaboration.

### 1.1 Human Behavior and Tools

As a species, humans have three innate motivations that direct the way we live and work. These are: 1. To find a mate, 2. To earn fair compensation for work, and 3. To exercise creative initiative<sup>1,1</sup>. However, when it comes to collaboration, the motivation for creative initiative is often stunted by poor management and confusion over **Language, Authority, Direction and/or Roles, LADR**. This results in lack of motivation and collaboration breakdown (see figure 1.1).

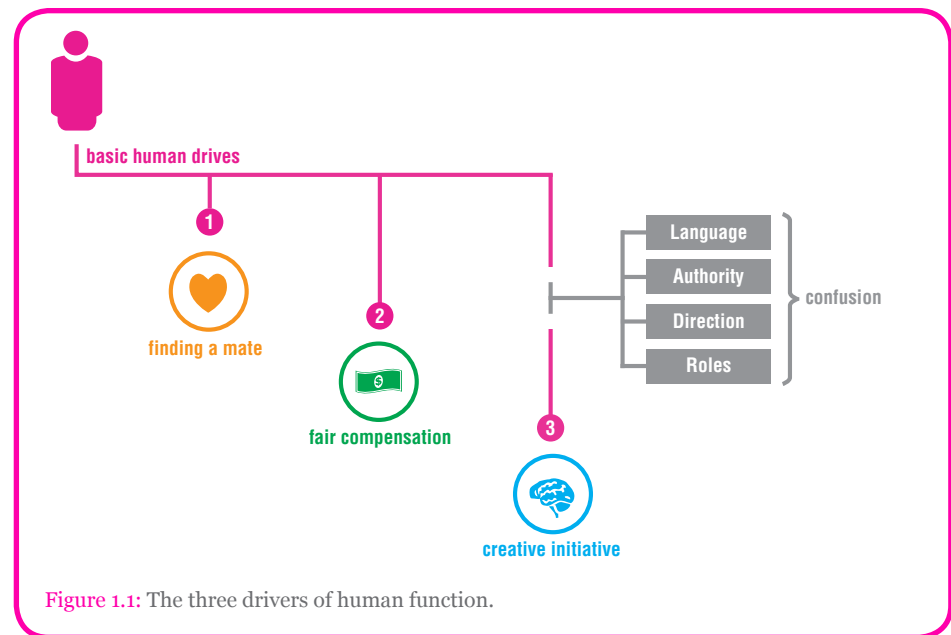


Figure 1.1: The three drivers of human function.

These anxieties have at their core basic behaviors inherent to human nature. They are predominately due to clashing of ideas, persons, interests, wishes and drives. Many different fields have attempted to provide answers to help people work together more effectively. But none have yet provided the ultimate solution to solve these problems of collaboration.

1.1 Pink, D. H. (2009). Drive : the surprising truth about what motivates us. New York, NY, Riverhead Books.

The value in designing tools to help collaboration is that they act as cognitive artifacts to help group members understand and learn how to deal with their weaknesses during group work.

The term cognitive artifact was first introduced by Donald Norman, who stated that cognitive artifacts may be defined as “those artificial devices that maintain, display, or operate upon information in order to serve a representational function and that affect human cognitive performance.”<sup>1,2</sup>

Hence, cognitive artifacts are man-made things that aid or enhance our cognitive abilities, such as calendars and to-do lists (see [figure 1.2](#)). From the view of the persons using the artifact, they function by changing the nature of the task. For example, a to-do list does not extend or amplify cognitive abilities. Rather, the to-do list presents the individual with a different task altogether. Without the to-do list the individual must remember all of the items on the list. With the list, on the other hand, the individual only has to do very little remembering as the list is used as a memory aid. Furthermore, almost all people can perform the latter task, whereas the former task of retrieving a list of items from memory usually leads to a considerable error rate.

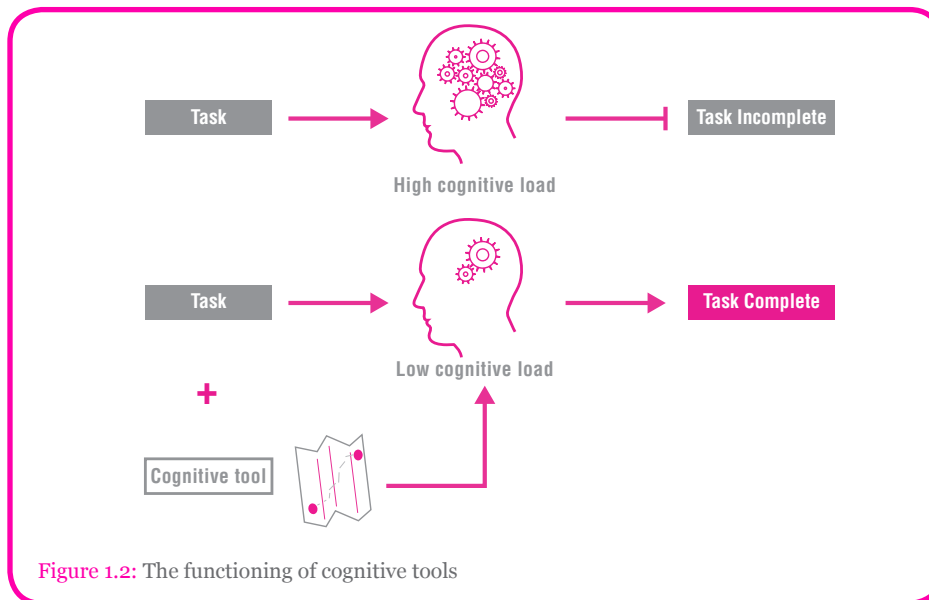


Figure 1.2: The functioning of cognitive tools

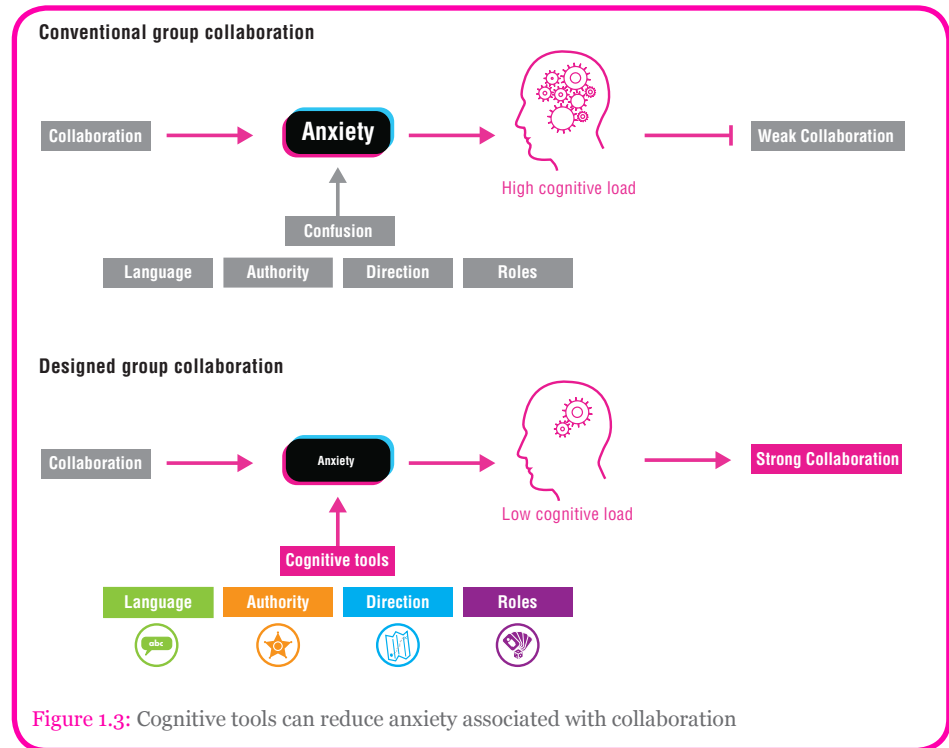
This is similar to how problem solving is conceived in the field of Cognitive Science, as Herbert Simon explains in *The Sciences of the Artificial*: “*solving a problem simply means representing it so as to make the solution transparent.*”<sup>1,3</sup>

**Cognitive tools reduce the cognitive load associated with performing certain tasks.**

- 1.2 Carroll, J. M. (1991). *Designing interaction : psychology at the human-computer interface*. Cambridge England ; New York, Cambridge University Press.
- 1.3 Simon, H. A. (1981). *The sciences of the artificial*. Cambridge, Mass., MIT Press.

With this in mind, we created tools that act as cognitive artifacts to ease the cognitive load associated with collaboration. This was achieved by changing the nature of how group members manage confusion over Language, Authority, Direction and Roles (see [figure 1.3](#)).

**By designing tools that address the causes of anxiety (Language, Authority, Direction and Roles, LADR) during group work, we can promote effective group collaboration.**



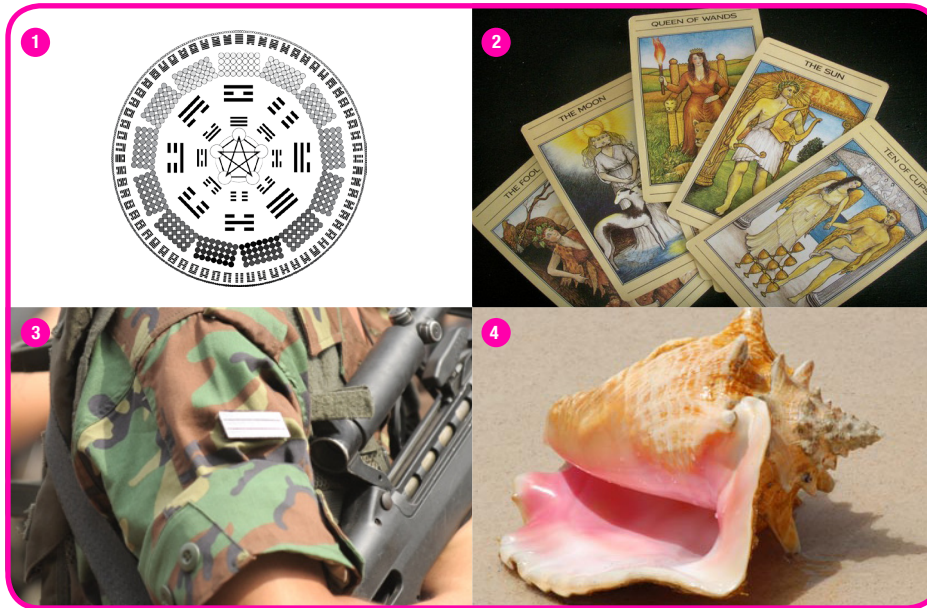
**Figure 1.3:** Cognitive tools can reduce anxiety associated with collaboration

Since anxiety behaviors demonstrate certain human archetypes, we believe designing tools in such a way can help groups manage these behaviors. Indeed, tools that have at their core a grounding in human nature, behavior and archetypes have existed throughout history. Importantly, designs based on an appreciation of the human psyche underscores the ability of these tools to work in many different situations and contexts.

For example, The I Ching, which is an ancient Chinese book intended primarily for use in divination, uses a set of tools to indicate human situational archetypes, such as *Arguing*, *Grouping*, *Prospering* and *Following*. These tools, are based on human behavior and are used to order one's affairs in such a way as to bring one's behavior and situation into harmony with the universal Tao<sup>1.4</sup>. Similarly,

1.4 Joseph, A. (1980). Karman, Self-Knowledge and I-Ching Divination. *Philosophy East & West* 30(1): 65-75.

archetypal roots also form the basis of Tarot card divination. In fact, Carl Jung was the first psychologist to attach importance to tarot symbolism. He regarded the tarot cards as representing fundamental archetypes of persons or situations embedded in the subconscious of all human beings.



*Throughout history there are examples of tools that were designed on an understanding of psychology and group archetypes:*

- 1. I-Ching*
- 2. Tarot cards*
- 3. Uniforms*
- 4. Conch shell*

Likewise, tools and systems are also used in everyday life to signify conditions related to group archetypes. For example: Uniforms are commonly used to signify leadership and authority archetypes; Sitting at the head of the table is associated with authority and; Certain objects can be indicative of communication rituals, i.e. the conch shell from Lord of the Flies signified who had the right to speak.

Furthermore, we have previously explored the potential success of designs based on basic human behavior and psychology. For example, Role cards, which were designed for Amuneal, a local Philadelphia manufacturer. We designed role cards for everyone to use during meetings, which gave them a very specific role to play: devil's advocate, white elephant, navigator, etc. The individuals were then asked to simply play the role they had in each meeting.

By designing meeting role cards, individual anxieties over responsibilities and purpose were managed. This allowed the group to collectively concentrate on the task at hand. Secondly, inherent to human nature, play is often used as a method for decreasing anxiety associated with authority dependence in groups.



**Role cards provide characters based on behaviors that are conducive to successful meetings and communication.**



Therefore, playing roles within the meetings presented individuals with a way to decrease anxieties, which they were all too happy to use.

According to Drive by Dan Pink, *Autonomy: The urge to direct our own lives.*

*Mastery: The desire to get better at something that matters.*

*Purpose: The yearning to do what we do in the service of something larger than ourselves.*

Recently it has been suggested that the conventional sticks and carrots (punishment and reward) method of motivation is useless at promoting creative initiative<sup>1.5</sup>. Instead, it has been proposed that autonomy, mastery, and purpose are what influences creative initiative. We believe designing with our clients will help promote investment through autonomy, mastery and purpose, which will therefore encourage creative initiative.

An additional value in tool creation is the capacity to play and interact with them. Through interaction, the tool becomes an object that removes the user from their usual state of being. For example, the act of interacting physically with a tool can get users moving around and even up off their chairs. This dynamic of interaction can be playful and often helps reduce the anxiety of performing work tasks. Indeed, in psychiatry, play offers a way to diagnose and provide therapy for the inner conflicts of young and old patients<sup>1.6</sup>. Therefore, tools that serve to reduce anxiety themselves, but are also playful, may have a synergistic effect in helping manage anxiety levels and allowing users to collaborate more effectively. In designing tools to be playful however, it must also be considered that the tool

1.5 Pink, D. H. (2009). Drive : the surprising truth about what motivates us. New York, NY, Riverhead Books.

1.6 Sutton-Smith, B. (1997). The ambiguity of play. Cambridge, Mass., Harvard University Press. p7.



should not have a pre-determined outcome. In his book, *The Ambiguity of Play*, Sutton-Smith states that *“the distinguishing feature of play is that it is an exercise in free choice”*<sup>7</sup>. Therefore, in order to remain playful, the tools being created must be open to chance and present the user with the ambiguity of outcome. If not, the important role of uncertainty in play will be lost and the value of the tool may be removed.

We believe, that the psychology behind the design of these tools is crucial for their use and success. Without this, the tools are but pretty designed artifacts that people have no investment in using. Therefore, our proposal is that though a design process founded on basic principles of human behaviors that govern learning, motivation and purpose, tools that help group collaboration can be designed.

The psychology important to this theory, borrows from decades of previous research in the fields of small group research, Industrial and Organizational Psychology (I-O) and Organizational Development (OD), (see side note for more details). The processes that we believe are important also shares much with I-O and OD and builds on methods from Industrial Design (ID), Human-Centered Design (HCD) and Transformation Design (TD). Since people are at the heart of groups, and people behave as human nature dictates, there remains an unexplored potential of designing to address basic human behaviors in group collaboration settings. We believe that a hybrid combination of design methods and the psychology of I-O, OD and group research is key to the success of these tools.

## 1.2 Psychology Of Collaboration

As introduced previously, since a group is an aggregate of more than one individual, all groups take on the character created by the different thoughts, emotions, drives and social, familial, ethnic, religious and cultural memberships of its members. These differences are potentially invaluable as they present a depth and variety of knowledge and experience that can help groups collectively perform their tasks. However, when inappropriately managed these differences can lead to paralysis, anxiety and conflict within the group. This is why group collaboration can be such a frustrating experience. Indeed, we have all heard, or said, statements such as; “group work takes too long”, “I work better by myself” and “group work is so frustrating”.

There are many studies describing the development of a working group. A common theme from these is the identification of a phase of group life where

*Initially, the primary task for I-O psychologists was to help companies meet the competitive needs of industry. I-O nowadays is characterized less by an interest in the physical working conditions, but more psychosocial features and issues at the group and/or organizational level*<sup>1,8</sup>.

*Burke defined organizational development (OD) as “a planned process of change in an organization’s culture through the utilization of behavioral science, technology, research and theory”*<sup>9</sup>. *OD interventions concerned with human processes during teamwork are of particular interest to this thesis. Work in this area has demonstrated many important factors that influence the ability to work with groups and promote change in their behavior*<sup>10</sup>.

- 
- 1.7 Ibid., p.10.
  - 1.8 Koppes, L. L. (2007). *Historical perspectives in industrial and organizational psychology*. Mahwah, N.J. ; London, L. Erlbaum., p.3-37.
  - 1.9 Burke, W. W. (1982). *Organization development: principles and practices*. Boston, Little Brown.
  - 1.10 Friendlander, F. and L. D. Brown (1972). *Organizational Development*. *Annual Review of Psychology* 25: 313-341.

conflict is but a necessary phase where emotions are expressed or differences must be reconciled. For example, Gibbard's life cycle model<sup>1.11</sup>, Tuckman's "Storming" phase from *Forming, Storming, Norming and Performing* theory<sup>1.12</sup>, and Whitaker and Lieberman's "focal conflict analysis" model<sup>1.13</sup> all describe phases of group conflict.

Of particular interest to this thesis is the theory that much of the difficulty of group life is based on anxieties of living in groups. As humans, we have developed coping mechanisms that help comfort us during anxious times in groups. However, this aspect of anxiety and the underlying reasons (language, authority, direction and/or roles) for them is something that has been largely ignored by design. As a consequence, we believe that design solutions that take this psychology of human behaviors into account allow us to more fully create solutions tailored to each group's collaborative needs.

Psychology and its effects on group collaboration within organizations are a major focus of Industrial and Organizational Psychology (I-O). As such, the subject matter of this thesis shares many interests with the field of I-O.

Of particular interest, an important development in I-O was the foundation of the Tavistock Institute of Human Relations in the 1950s. Here, Wilfred Bion described the functioning of small groups as a balance between the unconscious and conscious behaviors. Bion's central thought is that in every group, two groups are present, the "work group" and the "basic assumption group". He proposed that small groups are constantly managing the conflict associated with behaviors aimed at managing the anxiety of collaboration versus effectively collaborating to complete the work task<sup>1.14</sup>. Bion termed these behaviors as an aspect of the functioning group called "the basic assumption group". These basic assumption behaviors can be grouped into three categories: dependency, fight/flight and pairing.

Basic assumption behaviors are an unconscious reversion to internal comfort mechanisms. They do not aid in the progression of the work group or collaboration, since each member in basic assumption mode is often in a phase of conflict, comfort or avoidance. When used appropriately these behaviors comfort the group and help them manage the anxiety associated with the difficulties of collaborative group work. However, when the group allows the basic assumption behaviors to dominate, the group is prevented from successfully achieving the work task<sup>1.15</sup> (see [figure 1.4](#)).

*By examining group development and dynamics, work at Tavistock made significant progress in understanding some of the factors that influenced the health and well-being, conflict and breakdown of individuals and organizations.*

- 
- 1.11 Gibbard, G. S., J. J. Hartman, et al. (1974). *Analysis of groups : contributions to theory, research, and practice*. San Francisco, Jossey-Bass Publishers.
  - 1.12 Tuckman, B. W. (1965). *Developmental Sequence in Small-Groups*. *Psychological Bulletin* 63(6): 384-399.
  - 1.13 Whitaker, D. S. and M. A. Lieberman (1964). *Psychotherapy through the group process*. New York, Atherton Press.

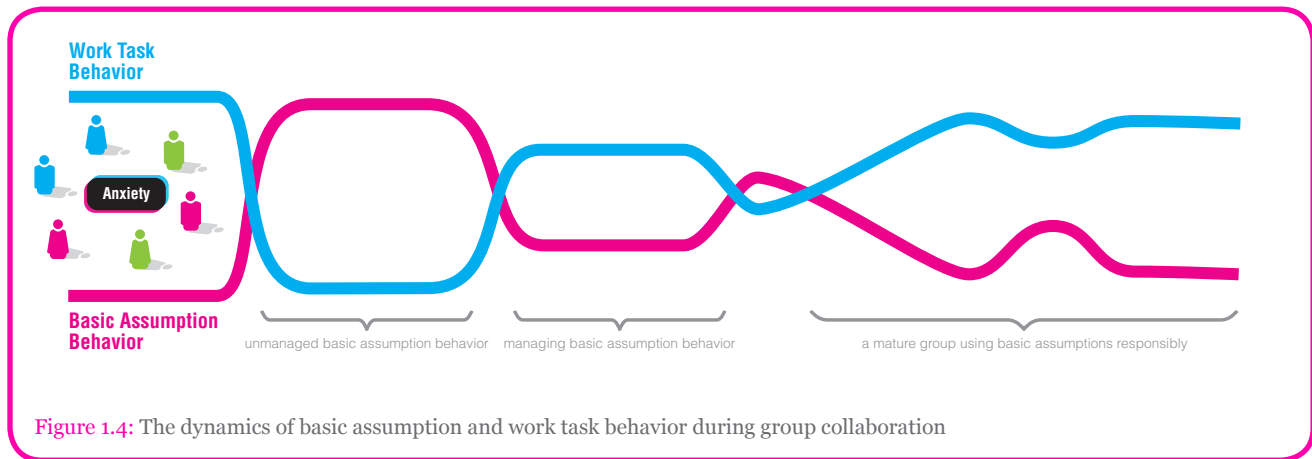


Figure 1.4: The dynamics of basic assumption and work task behavior during group collaboration

Bion's theory has been put successfully into practice through group dynamic workshops that help educate and bring awareness to the roles members play during collaborative group work. The purpose of these workshops is not prevention of basic assumption behaviors, but through introspective examination, they help group members understand, identify and successfully manage their use of basic assumption behaviors during group work. However, like other in depth psychological and introspective processes, these interventions are not largely used in organizational settings. Indeed, it has been documented that since the 1970s, there has been a backlash against touchy-feely psychology-based training interventions<sup>1,16</sup>.

For the purposes of this thesis we are not concerned with the specific type of basic assumption at play, but rather understanding the reason for reversion into anxiety managing behavior. Since these factors are inherent to human behavior, and are displayed throughout the majority of human interactions, there exists a beneficial opportunity of bringing this knowledge into designing group collaboration. From previous experience, we believe the majority of groups experience conflicts due to confusion surrounding Language, Authority, Direction and Roles (LADR). Therefore, we propose that these are likely to be the reason for a group's reversion into basic assumption behaviors. As a result, our LADR tools address the cause of the anxiety and thus help the group begin collaborating effectively again (see figure 1.5).

**Teams must manage  
basic assumption  
behavior to  
collaborate  
effectively together.**

- 1.14 Bion, W. R. (1961). Experiences in groups, and other papers. London, Tavistock Publications.
- 1.15 Bion, W. R. (1948). Experiences in groups. Human Relations I-VI.
- 1.16 Highhouse, S. (2002). A history of the T-Group and its early applications in management development. Group Dynamics-Theory Research and Practice 6(4): 277-290.

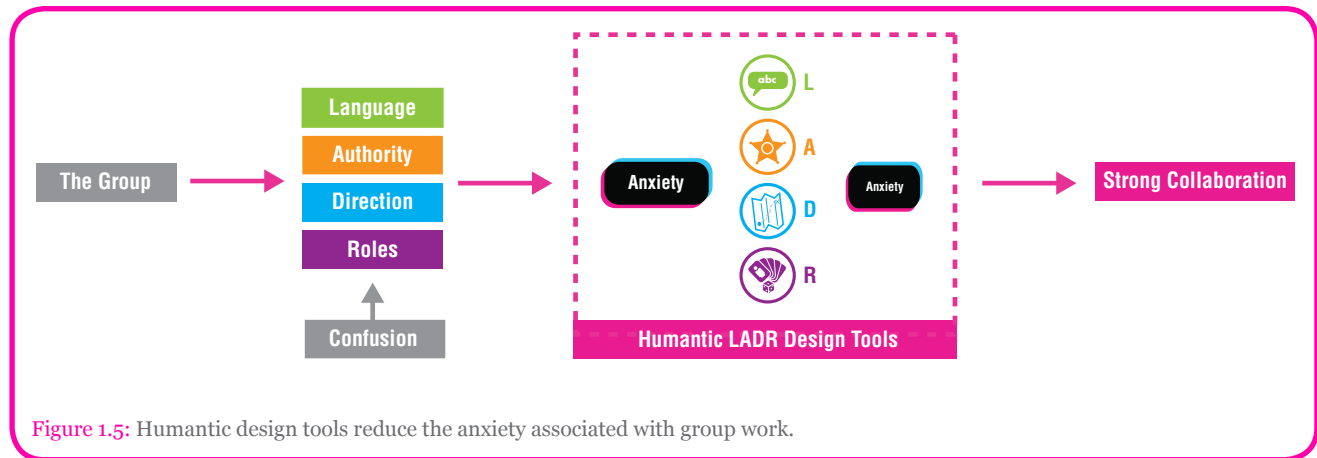


Figure 1.5: Humantic design tools reduce the anxiety associated with group work.

*The tools we have designed address the cause of collaboration of anxiety. This helps groups manage their anxieties, allowing them to collaborate more effectively.*

*Tools can help groups overcome the “touchy-feely” backlash associated with conventional psychology-based group interventions.*

Importantly, Bion’s thinking is largely absent from modern organizational thinking today, and as such, presented a unique opportunity to re-evaluate and test the importance of this theory in helping group collaboration.

Since all groups have people at their core, and as such, are characterized by the personalities of these people, we see the value in helping groups understand and manage these basic behaviors. However, unlike the practices of I-O, we propose the Humantics provides an alternative way to bring awareness to these important aspects of group dynamics. In particular, we believe tools will avoid the “touchy-feely” backlash and help individuals participate productively and enjoy successful group collaboration.

### **1.3 Psychology Underlying Direction, Roles and Language**

As previously stated, we can help group collaboration by designing tools that address the underlying reasons for reversion into anxiety managing behavior.

We propose that much of the anxiety surrounding collaboration is the result of confusion over language, authority, direction and/or roles. Importantly, this shares many similarities with the anxiety that has been described in the context of the psychology associated with joining groups.

A group works best when the members know each other’s strengths and weaknesses, and when the group’s tasks and ambitions are well matched to the limitations of its members. However, when we join groups most of us have the tendency to be cautious, to hold back our participation, wishes and secrets, until we know what group life is like. These reactions are a natural response to the

fear of losing parts of ourselves to the group. This creates a problem because the very withholding is what makes group life difficult<sup>1-17</sup>.

For a group to be capable of acting as a whole, members must know each other and know how each of them contributes to their collective action. Smith and Berg propose: “Members must be prepared to disclose who they are. However, it is believed to be impossible to know who one is in a particular group until such time as one knows something about that group.”<sup>1-18</sup>.

Therefore, for members to learn who they are going to be, to the group, they must be willing to disclose; to self-disclose, members need to know about the group to which they belong. This is very important when groups are forming. If one is in a group where members will not disclose either their inner perspective or their reactions to what others do, think and feel, then the personal and collective learning will be severely impeded<sup>1-19</sup> (see figure 1.6).

- 1.17 Smith, K. K. and D. N. Berg (1987). Paradoxes of group life : understanding conflict, paralysis, and movement in group dynamics. San Francisco, Calif., Jossey-Bass., p.109.
- 1.18 Ibid., p.111.
- 1.19 Luft, J. (1970). Group processes, an introduction to group dynamics. Palo Alto, Calif., National Press Books.

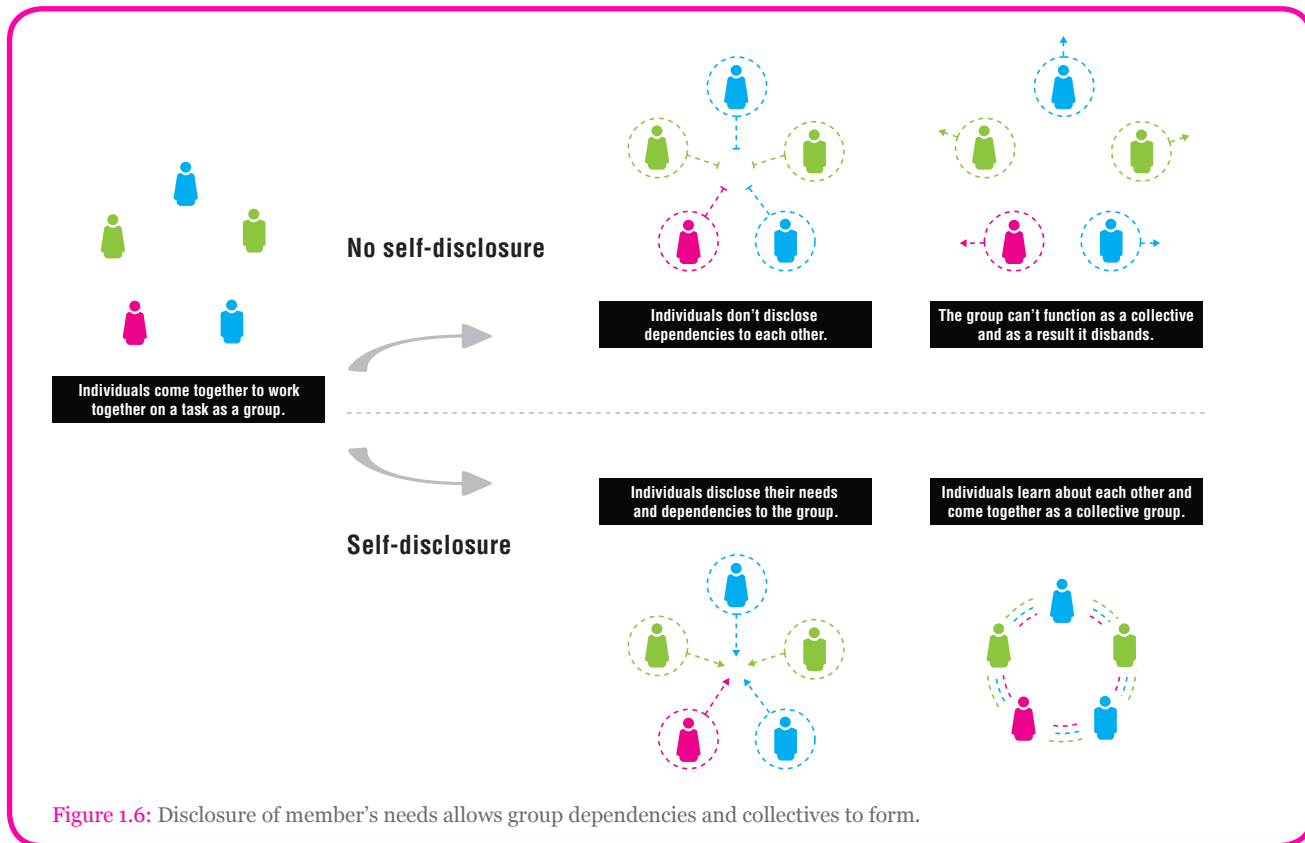


Figure 1.6: Disclosure of member's needs allows group dependencies and collectives to form.

*Our group sentence tools addresses the confusion over a group's purpose, see section 5.*

*However, dependencies should be managed appropriately for a group to collaborate effectively. If those being depended upon are asked to be something they are not, or when they are perceived as untrustworthy, independence will follow as a method of dissent. This is not conducive to collective group functioning, as being independent without connections to the group is nothing more than isolation. In order to experience independence in collective life, dependencies have to be expressed.*

In most, if not all cases, groups are formed by individuals to perform a certain task or duty. However, if this task is not effectively communicated or agreed upon, the group will fail to come together and work as a collective entity. This is actually a very common occurrence in groups. According to Newman, while individuals join together in groups primarily to do what seemed like an agreed-upon task, once they have assembled, the group spends a great deal of time defining what this task is<sup>1.20</sup>.

This disclosure of oneself to the group shares much with giving voice to one's dependencies within group settings.

Dependent behaviors are not to be avoided. In fact, a group can only function if members are able to depend on one another, since mutual dependency is what makes a group a group. When reliable dependencies are established a collective inter-dependence will follow, which provides the notion of independence, but with meaning, rather than distrust or dissent<sup>1.21</sup>.

Smith and Berg have proposed that at a group level, there is no way for a group to develop a structure of reliable inter-dependencies unless it's members give expression to their dependency. This creates a network of inter-dependencies that frees individuals from the kind of independence that is based upon fear that the group is an unreliable place to be dependent<sup>1.22</sup>.

Bringing transparency to the reason for a group's formation in order to allow members to disclose and voice dependencies is very important to the method described in this thesis. The psychological effects of bringing clarity to this aspect is something I-O and OD have not explored in such depth, and therefore offers a unique opportunity to help design group collaboration.

We believe that the importance of disclosure and communicating one's need, concerns and dependencies are very important to our method of designing tools to help collaboration. In doing so, we propose that anxieties commonly experienced in groups due to confusion over roles, direction and language should be minimized, thus allowing successful collaboration.

#### **1.4 Psychology Underlying Authority During Collaboration**

Another reason for ineffective collaboration is confusion and conflict over Authority.

When individuals join a group there are always conflicts surrounding power,

- 
- 1.20 Newman, R. (1974). Groups in Schools. New York, Simon and Schuster.
- 1.21 Smith, K. K. and D. N. Berg (1987). Paradoxes of group life : understanding conflict, paralysis, and movement in group dynamics. San Francisco, Calif., Jossey-Bass., p.109.
- 1.22 Ibid.

authority and leadership. Normally, within a group, power may be distributed in respect to age, knowledge, and expertise, delegated through hierarchy (management structures), or authorized through the group itself. However, conflict within groups starts to arise when power is treated as a resource that cannot be relinquished or distributed when it best suits the collective action of the group. For example, failure to pass authority onto a group member with expertise in a particular problem.

Authority and power have many different dynamics in group life. It has been proposed that the ideal situation for groups is the ability to let power flow and shift between individuals when it best serves the group's needs<sup>1,23</sup>. As such, leadership within a group can be fluid. Leaders can change overtime and also with different situations. For example, much like a sports team has different leaders on and off the field, a group may have a different leader for each aspect of a group project.

It is useful to imagine that power can flow from the authority invested in a person as the result an authorizing process. As such, it can flow between many people. For example, in a group, members can authorize an individual to enact certain things on their behalf. When this is accepted willingly by the group, the authority is accepted and the authority has the potential to effectively represent the group's collective interests. It has also been observed that individuals can develop power as they empower others. As this happens the empowered individuals actually increase the overall power within the group<sup>1,24</sup> (see **figure 1.7**).

In addition to the relationship, anxieties and conflicts within groups, there are also inter-group dynamics that can have significant effects on group life and collaboration.

Moreover to the underlying psychology at play within group life, there is also conflict between groups. When differences in values and ideologies lead to conflict over whose are most important, the conflict between groups can easily transform intergroup exchanges into a power struggle.

The theories surrounding power, authority and empowerment is something that I-O and OD have addressed previously to some degree of success. However, group anxieties resulting from power confusion and conflict are so important to group function that we considered power communication paramount where appropriate. Unlike OD and I-O, Humantics provide designed tools to help groups learn how to authorize and communicate power needs themselves.

***This was important in our process with the Finance office and directly influenced our design of the collective purpose cards.***

1.23 Ibid., p.111.

1.24 Ibid., p.134.

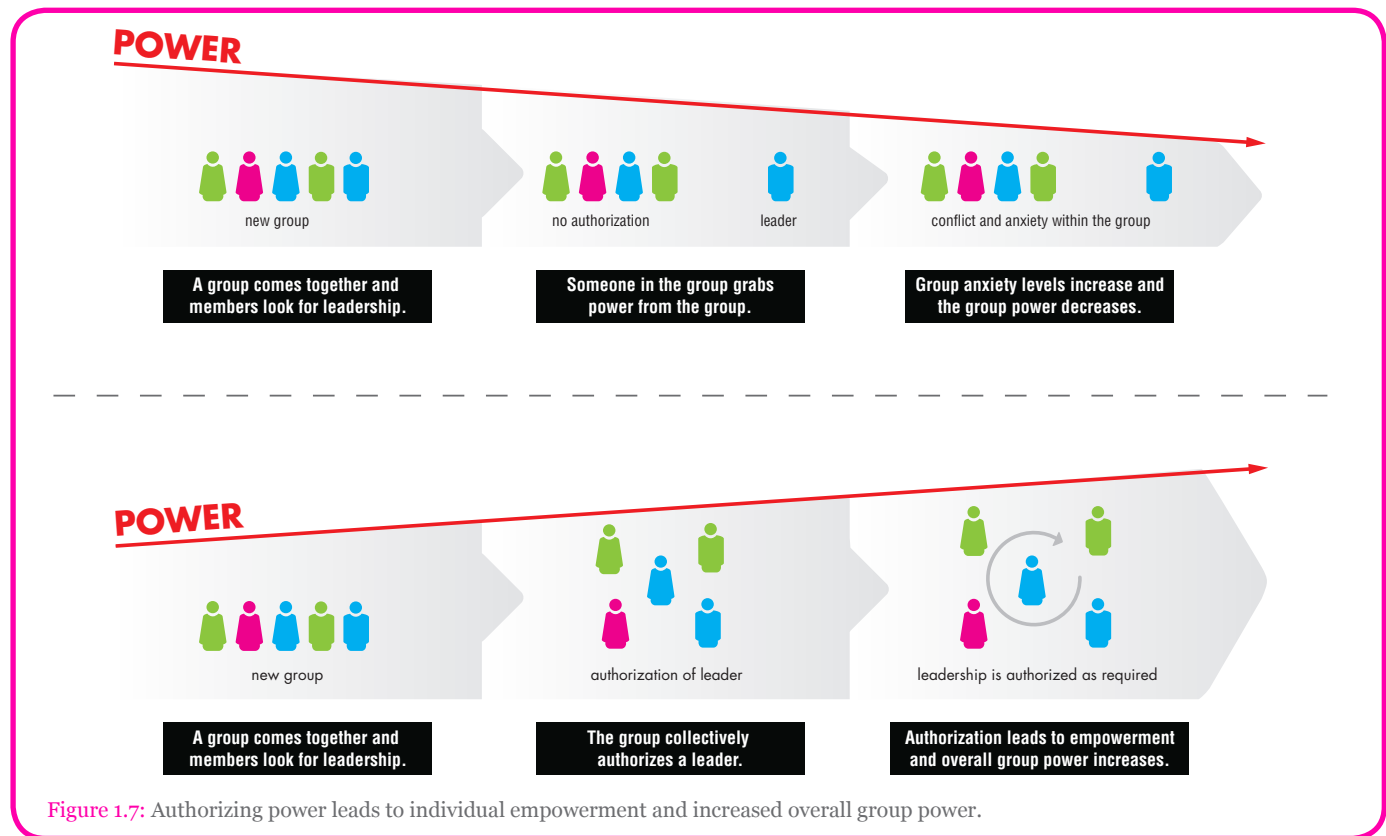


Figure 1.7: Authorizing power leads to individual empowerment and increased overall group power.

***By disclosing one's dependencies, it is easier to authorize groups members to lead when it is beneficial for the overall functioning of the group.***

The success of psychological based interventions are likely the result of their identification and targeting of the basic human behavior in the group. It is also the result of well-trained practitioners who have been trained to identify such conscious and unconscious behaviors effectively. However, although they can be successful, psychological based interventions can be emotionally draining for participants and may not guarantee understanding and investment from the whole group. Therefore, there is an opportunity to create a method that removes some of the emotional intensity with psychological inventions by targeting the cause of the behavior, rather than the behaviors themselves. Moreover, tools can be designed by the group, with the aid of designers, to help everyone in the group manage the psychological barriers preventing effective collaboration.

Overall, the opportunity we see is that the underlying psychology that governs the long-term success and collective purpose has yet to be addressed by designers. Although, I-O and OD have developed theories and methods to address these



anxieties, none have as yet overcome the inability to help all group members, promote long term learning and investment and overcome the stigma and “touchy-feeliness” of self-introspectiveness.

However, we believe that by bringing the group members in the design process, while addressing their issues at the psychological level, we can develop design tools, that will allow group members to manage their individual strengths and weaknesses, while helping promote effective group collaboration.

## 1.5 *Psychology of Autonomy*

In many traditional business structures there is a strong focus on the function of top-down hierarchy. While this type of command line may serve shipping and supply chain business fairly well, it lacks some of the essentials that human-centric organizations require. Organizations such as these rely on function, service and innovation to stay ahead of their competition, and must often find creative ways of achieving these goals. Ultimately, in order to be creative, autonomy is a pre-requisite.

Autonomy is different from independence. It means acting with choice, which means we can be both autonomous and happily interdependent with others<sup>1.25</sup>. This is an interesting perspective when applied to the subject of management in a top-down organization. The conventional idea of management is based on certain assumptions about the basic natures of those being managed. It presumes that without rewards and/or punishment we’d remain happily and inertly in place.

In contrast, research shows that there is greater job satisfaction among employees whose bosses offered “autonomy support.” These bosses saw issues from the employee’s point of view, gave meaningful feedback and information, provided ample choice over what to do and how to do it, and encouraged employees to take on new projects. The resulting enhancement in job satisfaction, in turn, led to higher job performance. What’s more, the benefits that autonomy confers on individuals extended to their organizations. Researchers at Cornell University studied 320 small businesses, half of which granted workers autonomy, the other half relying on top-down direction. The businesses that offered autonomy grew at four times the rate of the control-oriented firms and had one third the turnover<sup>1.27</sup>.

At part of our research into autonomous work environments we became interested in one of the most extreme examples of autonomy, coworking at Indy Hall. In a coworking environment, there are essentially no managers, no bosses, and subsequently, according to our interviews “no competition”, “no

*Children are a great model for true autonomy and creativity. Adults demonstrate occasional autonomy and creativity, like when planting a garden, planning a vacation, or even decorating for the holidays. Unfortunately, most of this autonomy and creativity takes place outside of work and on the weekends<sup>1.26</sup>.*

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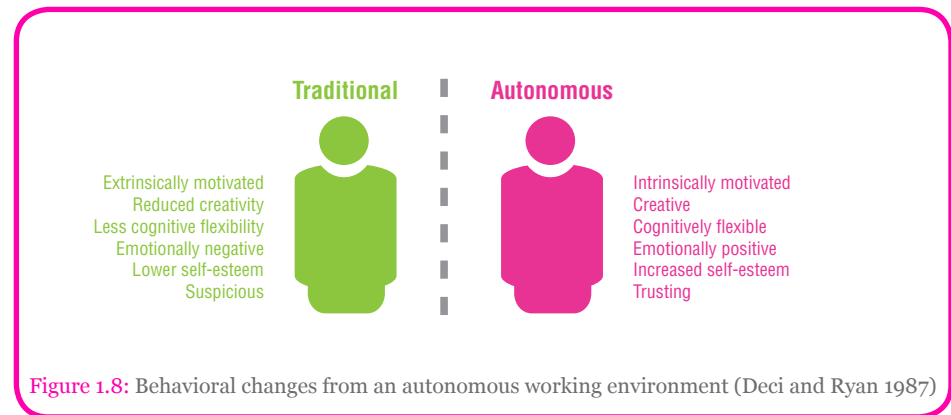
1.25 Pink, D. H. (2009). Drive : the surprising truth about what motivates us. New York, NY, Riverhead Books.

1.26 Tom Kelly GM, IDEO

1.27 Paul P. Baard, Edward L. Deci, and Richard M. Ryan., (2004). Intrinsic Need Satisfaction: A Motivational Basis of Performance and Well-Being in Two Work Settings. Journal of Applied Social Psychology. 34

**With this in mind, we took the important of autonomy very seriously in the design of our tools. Both the collective purpose Card game, and the Ambition tool kit were designed to promote the optimal perception and generation of autonomy.**

conflict”, and “full freedom”. Perhaps more interesting though, is the fact that in a coworking environment, there is also a continuous stream of innovation, free exchange of ideas and learning, and a curious desire of individuals to openly collaborate without complex contracts and without legal dispute. In some cases, these collaborations even extend past the individual’s core work tasks, into side projects and partnerships. There are managers but they act more as “den mothers” and there are owners of the space but they act more as “evangelists for coworking”, and facilitators of collaborative coworking projects. Ample research has shown that people working in self-organized teams are more satisfied than those working in inherited teams<sup>1.28</sup>. Likewise, studies by Deci<sup>1.29</sup> have shown people high in intrinsic motivation are better coworkers (see [figure 1.8](#)).



See section 3 for more information on the benefits of a working environment like *Indy Hall*.

- 1.28 Parker, S., Wall, T. and Hackson, P., (1997). That's Not My Job: Developing Flexible Work Orientations. *Academy of Management Journal* 40, 899-929.
- 1.29 Deci, E. L. and Ryan, R. M. (1987) *Journal of Personality and Social Psychology*. 53: 1024-1037.
- 1.30 Pink, D. H. (2009). *Drive: the surprising truth about what motivates us*. New York, NY, Riverhead Books.
- 1.31 Kuhn, S. (1997). *Stanford Encyclopedia of Philosophy*.

If we look at the two ends of the spectrum, traditional top-down businesses on one end and autonomous coworking environments on the other, it becomes clear that there is a wide range of opportunity for businesses to inject autonomy into the workplace. However, because most workplaces still reverberate with the assumptions of the old operating system, transitioning to autonomy won't, often can't, happen in one fell swoop. If we take people out of controlling environments, when they've known nothing else, and plop them into a ROWE (Results Oriented Work Environment) or an environment of undiluted autonomy, they will struggle. Organizations must provide “scaffolding” to help every employee find his footing to make his transition<sup>1.30</sup>.

### 1.6 Collective Action

The simplest way to describe collective action is to use the example of the Prisoners Dilemma<sup>1.31</sup> (see [figure 1.9](#)). A common view is that the puzzle illustrates a conflict between individual and group rationality. A group whose members pursue rational self-interest may all end up worse off than a group whose

members act contrary to rational self-interest. More generally, if the payoffs are not assumed to represent self-interest, a group whose members rationally pursue any goals may all meet less success than if they had not rationally pursued their goals individually.

This is in not dissimilar to the dilemma that takes place when a group comes together to achieve a work task. Each individual member will unavoidably weigh the payoffs for their involvement. Ultimately, since the goal of a group is to further the interest of its members, the competition of individual and common interests in an organization mimics that of a free market: people always maximize self-interest in a rational way.

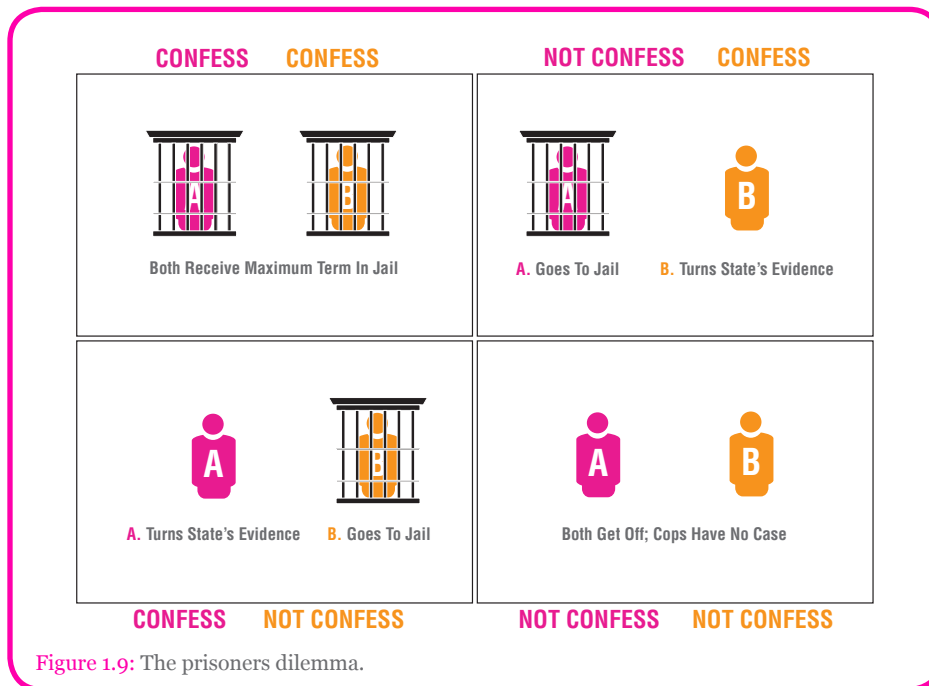


Figure 1.9: The prisoners dilemma.

We theorize working with small groups can be more effective to designing collective purpose. This is because the collective action of the group can be identified quicker and easier simply because there are less individual needs to be satisfied<sup>1,32</sup>. When using design to help a large group find collective action, it may be most effective to break the large group into smaller, more interest-diverse groups. This maximizes the spectrum of individual interests, thereby widening the scope of possible collective action items.

#### Prisoners Dilemma

Two accomplices have been arrested for a crime; A clever prosecutor makes the following offer to each. "You may confess or remain silent. If you confess and your accomplice remains silent I will drop all charges against you and ensure that your accomplice does serious time. Likewise, if your accomplice confesses while you remain silent, they will go free while you do the time. If you both confess I get two convictions, but you both get early parole. If you both remain silent, I'll have to settle for token sentences. The "dilemma" faced is that, whatever the other does, each is better off confessing than remaining silent. But the outcome obtained when both confess is worse for each than the outcome they would have obtained had both remained silent"<sup>33</sup>.

1.32 Olson M. (1971). The Logic of Collective Action. Public Goods and the Theory of Groups (Revised edition ed.). Harvard University Press.

*This theory was directly applied to our creation of the collective purpose tools for Vizthink and the Finance Office, see sections 4 and 5.*

When working with a single group or multiple groups it can be very effective to move the group into solidarity faster by using cognitive tools. These will help unite the members, by allowing them to come together and ease the process of finding a group and collective purpose. Furthermore, if the group members are asked to contribute their desires and anxieties, prior to joining the group or upon joining the group, the tool can have accelerating effect on creating collective action.

Humantics can be used as an effective method to develop tools to help groups prioritize and find their collective action. Often when groups are first formed and asked to find some collective action, basic human anxieties will govern the speed of group success. If cognitive tools are designed to engage the members in a playful way, their anxieties will decrease and they will be able to focus on the task at hand, finding collective action faster and getting to the work task.

### **1.7 Human Centered Design**

While the design component of our work can be traced back to traditional Industrial Design and Human Factors, we draw most strongly from Human Centered Design and Transformation Design.

Human-Centered Design (HCD) is a process and a set of techniques used to create products, services, environments, organizations, and modes of interaction. The reason this process is called “human-centered” is because it starts with the people affected by the design. The HCD process begins by examining the needs, dreams, and behaviors of the people influenced by the design solutions<sup>1.33</sup>.

HCD offers, at its core, what we feel is possibly the most important driver for our work. There are three primary objectives within human-centered design. These objectives should drive much of designers’ thinking, particularly in the earlier stages of design.

1. HCD should enhance human abilities. This dictates that humans’ abilities in the roles of interest be identified, understood, and cultivated.
2. HCD should help overcome human limitations. This requires that limitations be identified and appropriate compensatory mechanisms be devised.
3. HCD should foster human acceptance. This dictates that stakeholders’ references and concerns be explicitly considered in the design process<sup>1.34</sup>.

These three objectives provide a clear framework to begin working within the HCD model. Essentially, these are guidelines for designers to approach any scenario and begin to identify the key components that will determine the success of the project.

1.33 HCD Toolkit-IDEO  
1.34 Rouse, W.B. (2007) People and Organizations: Explorations of Human-Centered Design. Wiley-Interscience.

While we believe that HCD has provided a more accurate and possibly responsible practice for design, as with any area of design there are opportunities that some founders of HCD see as room for growth. Donald Norman specifically, has addressed the possible oversights of HCD. Norman states, there are two reasons, one the activity-centered nature, and two the communication of intention from the builders and designers.

“The problem, however, is that HCD has developed as a limited view of design. Instead of looking at a person’s entire activity, it has primarily focused upon page-by-page analysis, screen-by-screen. As a result, sequences, interruptions, and ill-defined goals — all the aspects of real activities, have been ignored. These changes are only possible if one takes a larger view — an activity-centered view. None of this is present in today’s HCD. It should be, but it isn’t. By focusing upon the tasks to be done and on the activities that are actually carried out, I hope to broaden people’s views of what should be considered.”<sup>1.35</sup>

## 1.8 Transformation Design

We believe that the type of design best suited to satisfy Norman’s remarks and take HCD to the next level is Transformation Design. While HCD, focuses on pulling real data from users to inform designs, the results are often objects or products for market. Transformation design focuses on developing tools, that may take the form of objects, learning tools, or even systems to name a few. Often, the development of these designs also relies heavily on not simply the user, but also all key individuals involved in the process. These key individuals are called stakeholders and are equally important to the process as a whole.

In 2006, the Design Council formed a group of leading designers to work on several projects to research into what would push design to its next level. The Design Council formed this group and documented its findings of the two year-long studies, in a comprehensive Transformation Design document called the RED PAPER02. In this, RED used product, communication, interaction and spatial designers’ core skills to transform the ways in which the public interacts with systems, services, organizations and policies.

Transformation design is best suited to address the future direction of design, and offers more of a Human Centered approach with a primary focus on more complex human systems<sup>1.36</sup>. The leaders and pioneers of Transformation design focus strongly of developing management to design change. In their article Managing Change, Peter Coughlan & Ilya Prokopoff- co-leaders of IDEO state,

*During our work with the Finance Office the project expanded to include stakeholders in addition to the original client. See section 5.*

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1.35 Norman, D. A. (2005). Human-centered design considered harmful. *Interactions*. 12(4), 14-19.

1.36 [www.IDEO.com](http://www.IDEO.com)

***It is with such an appreciation of methods that we believe tools that address the cause of group psychology and weakness are so successful.***

“Organizations might look to tools from the field of design to help business managers both to get in touch with their customers’ (and other stakeholders’) unarticulated needs and desires, and to intentionally imagine and create futures based on the one thing that seems to remain relatively stable, even in times of great change: human behavior. When made a part of an organization’s work processes and competencies, design tools enable an organization to embrace change as a normal part of managing its business.”<sup>1.37</sup>

For new designers and old designers alike who are looking to practice a new way of design, Transformation design, can be outlined in six key points<sup>1.38</sup>:

1. Defining and redefining the brief:
2. Collaborating between disciplines
3. Employing participatory design techniques
4. Building capacity, not dependency
5. Designing beyond traditional solutions
6. Creating fundamental change

Although Transformation design is at the core of Humanitics, we feel that there is an opportunity to take it to the next level. By adding theory, methods and practices from the psychology governing group dynamics and motivation, we can more accurately pinpoint key hurdles and therefore increase the effectiveness of the design process.

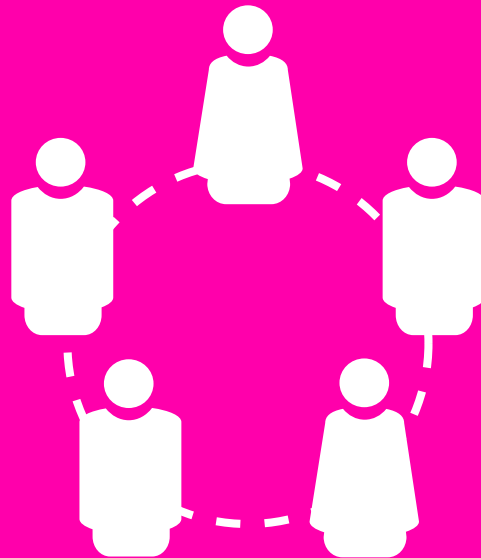
1.37 Coughlan, P., and Prokopoff, I. (2006) Managing Change, by Design. Rotman Magazine. Jan 01.

1.38 Design Council-RED PAPER02 Transformation Design, 2006



# Humantics

*Methods and Processes*

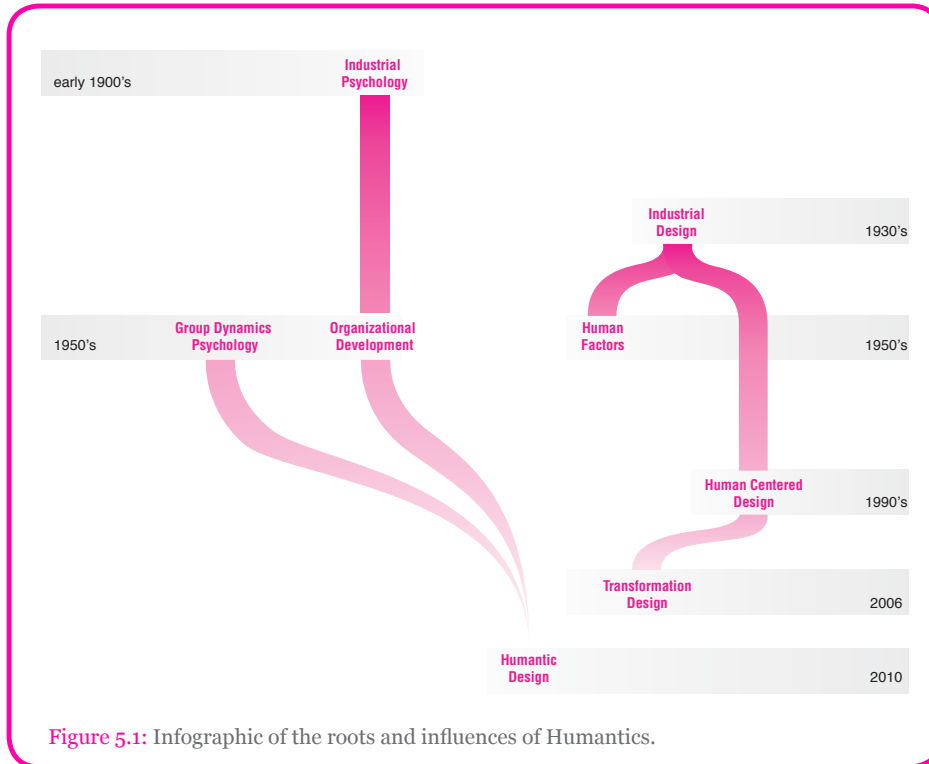




# Humantics

## 2.1 Overview

As described in the previous section, we believe in building on methods from HCD and TD and uniting them with theory from group psychology, I-O, OD. The following diagram illustrates where Humantics is positioned in the larger history of psychology and design.



*We believe that a hybrid combination of design methods, the psychology of I-O, OD and group research is key to the success of these Humantic tools.*

During collaboration, the anxiety managing behavior described by Bion<sup>2,1</sup>, is due to confusion over the Language used to communicate between members, the dynamics of Authority, the Direction of the group and/or the Roles members take within the group - we call this LADR. Therefore, an appreciation of these anxiety-managing behaviors and an understanding of the underlying reasons for them are key to Humantics.

2.1 Bion, W. R. (1961). Experiences in groups, and other papers. London, Tavistock Publications.

In order to overcome group anxiety and weakness in collaboration, we propose the design of tools. As identified earlier, tools based on human behavior and group archetypes have been used throughout history. Furthermore, tools have been shown to be particularly useful in easing the cognitive load associated with performing certain tasks and learning. Therefore, we design tools that specifically target the underlying cause of anxiety during group collaboration, i.e., LADR.

Similar to HCD, TD and participatory processes of OD, we believe it is imperative to bring group members into our design process. The reasons for this are 2-fold.

1. Much like HCD and TD, by bringing group members into the design process, the tools that we are designing will be more tailored to their needs.
2. Perhaps less obvious, we involve people into the design process because it promotes autonomy, which has been identified as being important at promoting creative initiative<sup>2,2</sup>. This is central because through creative initiative, group members will be more motivated and invested in the process and should feel greater ownership in the tools they are helping design.

## 2.2 *Humantics Method*

Our process involves taking the above described factors and merging them with a design process of researching, analyzing, prototyping and testing. The process begins with research, such as observation and photo documentation. We then begin interviewing our client groups in order to develop a full understanding of their needs, concerns, ideas and opinions. From this we move onto analyzing the interviews and observations in order to discover common patterns, themes and ideas.

Next, an important stage, much like that of OD, is feedback of this information back to our groups and clients<sup>2,3</sup>. This not only allows us to check the validity of our analysis, but also brings the group members into the design process. We achieve this by using visualizations, mapping and infographics. The use of more graphical methods of communication shares more similarities with a design process than that of either I-O or OD. Therefore, this is a unique opportunity to begin using design processes to communicate the psychological aspects of group collaboration. With a process based in design, we also reduce the risk of failure by rapidly prototyping our ideas to generate user feedback.

During analysis feedback, we also begin to propose potential scenarios where design ideas are created to help address the issues identified in the interviews. This is an important part of the design process, because through scenario building we offer opportunities for group members to imagine the possibilities of change.

*The importance of feedback following research and observation has been shown to be a positive factor for promoting change. For example, survey feedback studies, where questionnaires were used to generate information on leadership, organizational climate and satisfaction, demonstrated that presenting feedback to group members can help gain their cooperation in future studies<sup>2,3</sup>.*

- 
- 2.2 Pink, D. H. (2009). Drive : the surprising truth about what motivates us. New York, NY, Riverhead Books.
  - 2.3 Friendlander, F. and L. D. Brown (1972). Organizational Development. Annual Review of Psychology 25: 313-341.

Humantic design places the user at the center of this process because their participation is imperative to promote sustainable investment and change. Ultimately, we hope that by involving group members in the design process they will develop the skills, knowledge and tools to continue working together and solving problems once we remove ourselves from the process.

### **2.3 Humantics Process**

Our process can be divided into 3 main phases, each of which has their own series of tools and aims (see [figure 2.1](#)).

- 1. Articulation.** These are methods and processes that aim to gather information about the issues faced by group members. We use tools such as mapping, visualizations and scenario building to feedback and test the validity of our research.
- 2. Anxiety.** Once our research has been validated, we next filter the information through the LADR criteria to determine which particular form of confusion is causing basic assumption behaviors. We then co-create with the clients a series of cognitive tools that by communicating roles and/or responsibilities, visualizing concerns and needs, signifying leadership needs/roles, and/or helping to orient group purpose, help address confusion surrounding Language, Authority, Direction and Roles.
- 3. Ambition.** As clients continue to use the Anxiety tools we designed, the final phase of our relationship involves creating the necessary tools to continue learning and problem solving once we leave. These tools are based on the importance of encouraging autonomy, mastery and purpose, which are essential for sustaining innovative collaborations. Ambition tools consist of 3 main types. Motivator tools help maintain the purpose and drive of the group. Generators tools further support the disclosure, sharing and discussion that is required to maintain a healthy group. Finally, Reflector tools help members assess performance and results, which is important for continually improving group success.

### **2.4 Humantics Results**

By using Humantic tools, our aim is to maintain momentum and build trust during collaboration. By achieving this, individual investment in the process will increase. Correspondingly, anxiety will decrease as group members use the design tools to address the cause of basic assumption behavior. This is the science and design of creating sustainable collaborations. (see [figure 2.1](#))

*In addition to psychology and design, our method is deeply founded in a process of co-designing with our project partners at every step.*

*Within our method there is a calculated process that we use to gather data and design tools. This is used to identify group needs, design targeted tools and maintain motivation.*

*The result of this is an increase in group investment with a corresponding decrease in group anxiety. This encourages sustainable collaboration.*

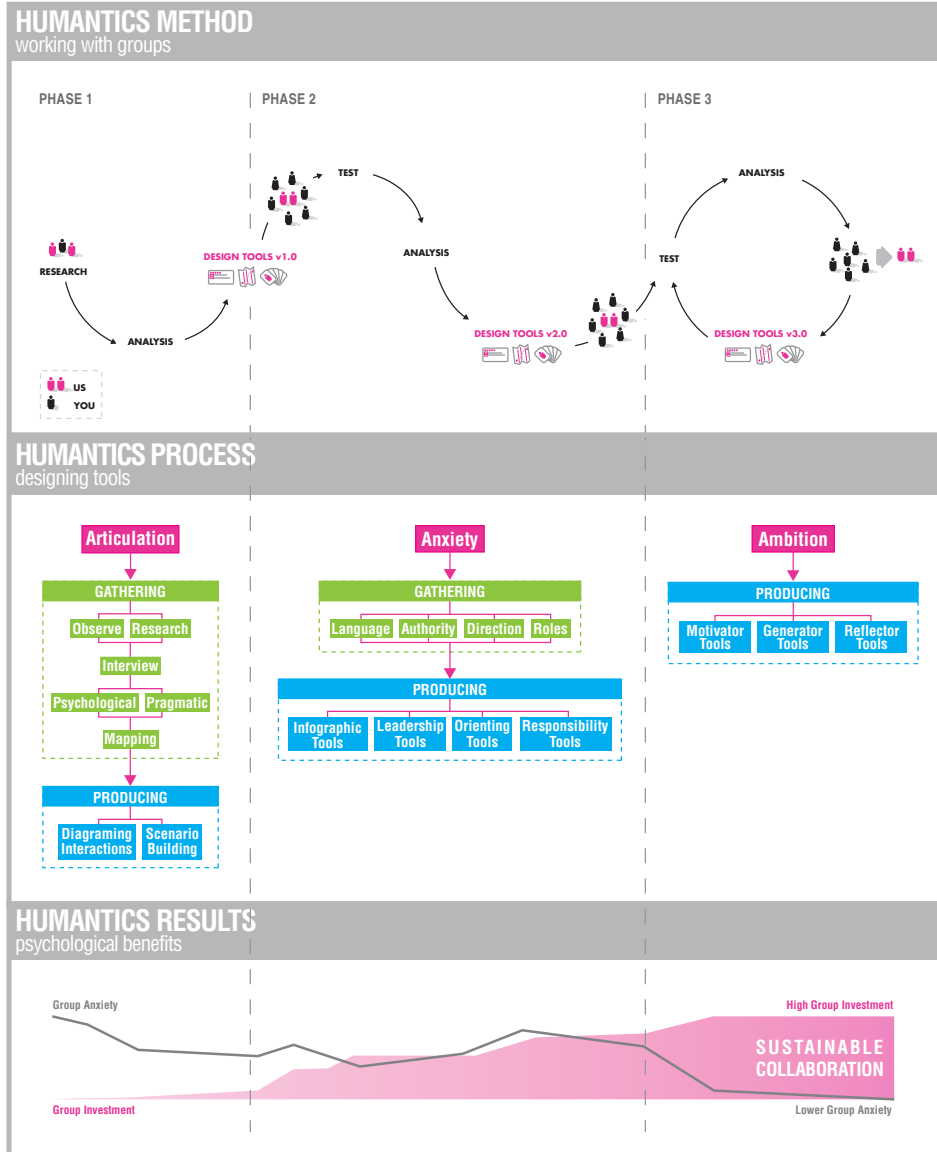
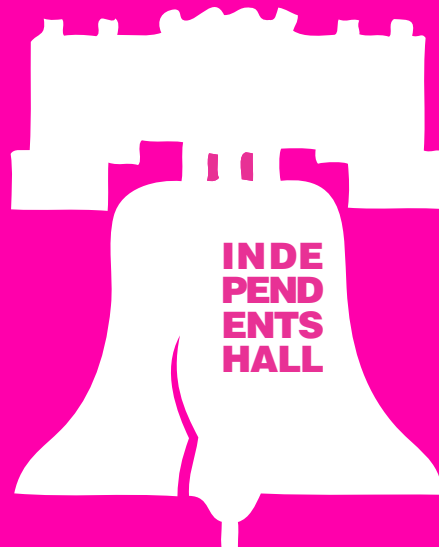


Figure 2.1: Humantic Method, Process and Results diagram



# Independents Hall

*A Coworking Space in Philadelphia*



# Indy Hall

## 3.1 Introduction

Independents Hall (commonly known as Indy Hall) is a coworking space in Old City, Philadelphia. An idea originally conceived in 2006, founding partners, Geoff DiMasi and Alex Hillman established the first incarnation of Indy Hall in the spring of 2007. Today, the Indy Hall community comprises of over 160 members ranging from designers, developers, writers, artists, entrepreneurs, scientists, educators, small business owners, telecommuters, marketers, videographers, game developers, and more. Those at Indy Hall all agree -

*“We all know that we’re happier and more productive together than alone.”*





The idea of coworking has been attributed to Brad Neuberg. Back in 2005, Brad faced a modern predicament<sup>3.1</sup> -

*“It seemed I could either have a job, which would give me structure and community, or I could be freelance and have freedom and independence. Why couldn’t I have both?”*

Welcome to  
Independents Hall  
in Philadelphia,  
affectionately  
known as Indy  
Hall, or The Hall it  
is home to over 160



3.1 Fost, Dan., (2008).  
Coworking a cooperative for  
the modern age. New York  
Times. Feb. 21.



As a response, today there are over 150 dedicated coworking spaces in North America, with many cities and organizations planning to establish more. They allow people to set up an office and rent out desks, creating a community of people who have different jobs but want to share ideas. Most of the coworkers are drawn to these spaces for similar reasons; they like working independently, but they are less effective when sitting at home alone<sup>3,2</sup>.



◀ *Welcome to Independents Hall in Philadelphia, affectionately known as Indy Hall, is home to over 160 coworkers.*

These interests and beliefs about coworking presented a novel opportunity to investigate the underlying factors and psychology that provide coworkers with the nourishment to be creative. Therefore, we investigated the key components of the collaborative environment that can then be lifted and applied to more traditional work environments.

.....  
3.2 Ibid.

*We were initially interested in the dynamic space in an effort to understand the spatial benefits of Indy Hall.*

*However, it became clear that the people rather than the space made Indy Hall a creative hotspot.*







◀ *“They play as teams, they shout and heckle. It a metaphor of how work gets done.”*

– Alex



◀ *“The way I worked on things completely changed when I came here. Just the ideas that developed over coffee was amazing.”*

– Randy

### 3.2 Results

As part of our research, we worked at Indy Hall three days a week and attended most Indy Hall events. We believed that in order to fully understand the environment and get to know the people there, it was important to be a part of the community as much as possible. In addition to passive research, we interviewed six different types of members, from small time members to founders to further understand the psychology at play in this creative environment.

Included here are a few of the interviews and initial analyses (in the side bar) that we extracted from our “Indyviews”.

#### *Dave and Johnny (Two Guys on Beer)*

**Full time members and collaborators**



photo credit Chris Sembrot Photography



photo credit Tom Milewski Photography

For more info on TGOB please visit  
[www.twoguysonbeer.com](http://www.twoguysonbeer.com)

Two Guys on Beer (TGOB) is a video podcast website created by two original Indy Hall members, Dave Martorana and Johnny Bilotta. Calling themselves beer “tasters”, rather than connoisseurs, TGOB has a following of 20,000-30,000 viewers who tune in, up to three times a week, to watch Dave and Johnny review some of the latest brews on offer to the public.

TGOB was originally Dave’s idea and following a journey to SXSW in 2007 they started to seriously talk about getting TGOB up and running. From working in Indy Hall, Dave and Johnny already knew each other and had mutual respect for each other’s work. This was one of the primary reasons that TGOB got started and remains successful to this day.

***Q. What brought you and Johnny together to start Two Guys on Beer, apart from loving beer?***

**Dave:**

“I had seen how he worked and I knew he worked hard. I got to see he worked his ass off, I got to see the quality. I was around other people at Indy Hall, but I never saw that work.”

“He turned out good product and we both knew we were top of our game. We weren’t slackers.”

“Before you can work with someone, it is required that you already respect them and their work before you can trust them.”

**Johnny:**

“We could depend on each other, I could depend on him to do his job and he could depend on me to do mine.”

***Q. How did the environment at Indy Hall help start this relationship between you?***

**Johnny:**

“There are people who talk the talk and there are certainly those who can walk the walk. And those who talk the talk, we can almost spot them a mile away.

“The people that get here either; Get humbled; Realize they’re out of their league; or step up to the challenge and contribute themselves.”

**Dave:**

“We have a saying here that everyone comes in with the smartest kid in the room syndrome [since they’ve come from the corporate environment] and you get here and you’re not the smartest in the room any more.”

***Indy Hall seems to breed an environment that allows this mutual respect to develop.***

***This suggests that respect for each other’s abilities and skill will be important in influencing the success of any collaboration.***

***Indy Hall is an autonomy rich environment. Perhaps autonomy breeds a quicker differentiation between those who are average versus those who excel.***

*Indy Hall allows relationships to develop and dissipate naturally when it benefits the work.*

*At Indy Hall there is no competition for promotions, bonuses or perks, which often hamper collaboration in more conventional working environments.*

*Following one's creative drive appears to happen at Indy Hall because the environment removes road blocks and bureaucracy that often stifles creative initiative.*

***Q. How does this compare to a more traditional working environment?***

**Johnny:**

“At Indy Hall, unlike the corporate world, if you’re working with someone on a project and it doesn’t work out, you don’t have to work with them on the next one. In the corporate world, you’re stuck with that person and the relationship will get worse and you’ll get less productive.”

***Q. From our research, environments that encourage autonomy are more creative and innovative. How does Indy Hall encourage creativity?***

**Dave:**

“We both have an entrepreneurial spirit, we don’t have mental roadblocks.”

“People who work at Indy Hall are typically outside those mental road blocks.”

“I know I can go somewhere else and make six figures, but I’d rather be at Indy Hall, toil away and be my own man. TGOB isn’t making any money at the moment. It’s our largest failing success story, but we don’t want to let people down, and we get this intrinsic love out of directing our own lives.”

“Indy Hall, allowed us to take every opportunity that presented itself.”

**Johnny:**

“At a 9-5 job, TGOB would be at a steadier pace and more regimented. But, we would lose entertainment value.”

**Parker**  
Space Administrator



Parker Whitney is the floor manager of Indy Hall. He has a background in psychology, but after being creatively stifled for years in college, took an unpaid intern position at Indy Hall because he was “blow away and intrigued by what was going on there.” Parker is now a full-time employee of Indy Hall and gets paid, not much, but enough to “keep his head above water.”

***Q. Why did you apply for your job at Indy Hall?***

“I’d always been a creative person, a self motivated person, but in college I became stagnant. Indy Hall was the kick-start I needed to get my brain back where it needed to be. To get my creative juices flowing.”

***Q. Obviously money wasn’t the driving factor. What extra benefits did Indy Hall present to you?***

“It wasn’t about money, it was about social capital. That was my payment.”

“I do these [manager tasks] to get the opportunity to be surrounded by the people that work here. I want an intern so I can migrate. I’d love to get a full time membership, pay to be here and work and support myself out of Indy Hall.”

***In addition to making sure members pay their dues, Parker runs the everyday working of the Indy Hall space, but that’s not what drives him.***



*Opportunities that have been presented to Parker through Indy Hall has lead to him calling himself “a coworking evangelist”.*

*The chess board is important to many interactions at Indy Hall.*

*Parker believes the lack of bureaucracy and management structure is key to the creativity and collaboration at Indy Hall.*

***Q. How has Indy Hall helped you be more creative?***

“I’m interested in new stuff since I’ve been part of Indy Hall, such as writing for Geekadelphia and trying to make an iPhone game.

“I have a crazy idea, a thought, things I’m actually motivated to try and do, and I wouldn’t have been able to do anywhere else.”

***Q. We hear that the space isn’t the important factor at Indy Hall, it’s the people. Can you tell us about that?***

“You’re not renting a desk, you’re renting your neighbors and a community.”

“I didn’t expect to meet so many people and take an interest in what they do. I’m now trying to learn computer programming after watching people go through the process.”

“It inspires me to think in different ways. I’ve been shown there’s another way to live, you can do many things, you don’t have to pigeon whole yourself.”

“This environment allows creativity.”

***Q. If you had to leave Indy Hall tomorrow, what aspects of it would you take to your new job?***

“No cubes. Cubes and sectioning off has major effects on the mind.”

“The chess board. Someone comes over to the chess board and four of us can work through a puzzle. It’s a way to bond with people and make connections. It’s a catalyst for creating relationships and conversations.”

“No boss looking over your shoulder. Companies create a friction of distrust.”



## Alex

Co-founder



photo credit Jeff Fusco, Philadelphia Weekly

Alex Hillman is one of the co-founders of Indy Hall. His background is in technology, IT/web coding and development. He started Indy Hall, Philadelphia's first coworking space in 2007.

Alex's interest in coworking originated from his time as a freelancer. Although enjoying the freedom to direct his own life, out with a corporate structure, he began to miss the interactions with other like-minded people.

### Q. Why coworking?

"I was starting to see that my aspirations were taking me to be independent"

"At this time, one of my freelance clients was Chris Messina from San Francisco, who is largely know for Open Source and championing BarCamp. Chris and his wife were starting to think about coworking and making an office like BarCamp everyday. I wanted BarCamp everyday"

"I liked my independence but I wanted to be around other people. I want to be independent without being alone. I saw coworking as a means to this end."

"Coworking became this end goal that if I could get enough people together I could have this place and eventually it could grow to size to have influence."

"Now I'm on a new mission, of when we create this space it becomes a hotspot. Basically, you take all of the lit matches, you bring them together and you've got this giant torch that makes it easy to find out what's going on in your own backyard. So, that's ultimately why coworking."

"It allowed us to bring together those match heads. It allowed us to find out what's going on in your own back yard. Allows us to put a bunch of people together in there own head space and see what they can accomplish without telling them to accomplish anything at all."

*BarCamp is an international network of user generated conferences (or unconferences) - open, participatory workshop-events, whose content is provided by participants. [www.barcamp.org](http://www.barcamp.org)*

***In describing Indy Hall and how he envisions it's success of allowing people to join and collaborate, Alex explained it as "small pieces loosely joined".***

***Indy Hall affords the ability to bring people together to create by removing roadblocks.***

***Q. Why is collaboration so successful at Indy Hall?***

“At Indy Hall you’re developing a community of trust.”

“In a corporate environment you almost inherently don’t trust your coworkers because you likely to be gunning after the same position. But here, you’re not vying after the same stuff. It’s competition with, rather than against.”

***Similar to TGOB, Alex believes that trust between coworkers is essential for successful collaboration. At Indy Hall trust develops between people easier since they work together without competing against each other.***

***Q. What makes collaboration easier at Indy Hall than a conventional office environment?***

“Because we put so much emphasis on the social aspect of working together, I get to learn to trust the person sitting next to me, so that the likelihood of us truly collaborating or supporting one another is multiplied.”

“Having an environment where trust isn’t intrinsically removed, but is intrinsically implied allows for coming together to happen easier.”

“There’s also this really incredible counter-intuitive expression of accountability. In corporate environment you are legally accountable, and there are crazy amounts of finger pointing, here you have this just get it done thing. I think it comes down to trust again and hand-offs are much smoother.”

***Q. Indy Hall has a very organic authority and management structure. Could you comment on this?***

“Management here [Indy Hall] is very organic and emergent. When you create management for the sake of it, there’s no way you’re not over managing. We try and find ways to help things manage themselves.”

“We don’t create structures for the sake of creating structures.”

“Giving away power is really powerful.”

“The space is an empowerment tool. We give aspects of the space to people so they can feel empowered, so they can take ownership.”

**Q. Why are you so invested in Indy Hall and coworking?**

“I made a commitment to myself that I need to work on things that I care about and are fun. If I’m ever not doing that, I need to stop immediately.”

“Every single time I take a step investing in somebody else, I’m also investing in myself.”

“I’m having fun working on things I care about and I’m making money. I see every bit of that related to the stuff that’s going on here [Indy Hall] and I see other people doing that. Do you know who liberating that is for me?”

“A rising tide raises all ships. Everybody’s win benefits everybody in this ecosystem.”

***In Indy Hall, there are no real managers, everybody does what is needed to make the place run effectively.***

***Working at Indy Hall allows Alex to take creative initiative, since his basic human drives and autonomy, mastery and purpose are satisfied.***

***Indeed, his comment on a rising tide is very similar to a type 4 tribe mentality, since his purpose, is often larger than his individual existence<sup>3.3</sup>.***

3.3 David Logan on tribal leadership. URL: [http://www.ted.com/talks/david\\_logan\\_on\\_tribal\\_leadership.html](http://www.ted.com/talks/david_logan_on_tribal_leadership.html)Date: 2009

### 3.3 Analysis and Conclusions

What are the key principles be interpreted from Indy Hall?

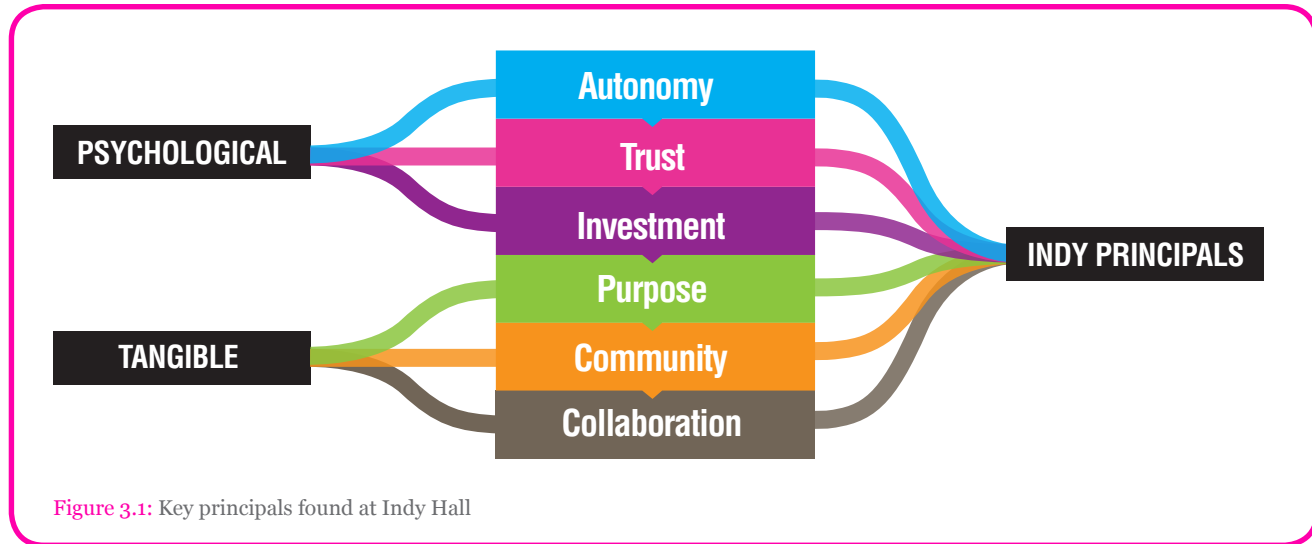


Figure 3.1: Key principals found at Indy Hall

▲ *The goal of our work at Indy Hall was to uncover the main beneficial principals and examined how and why they exist. This allowed us to identify the key points that could be applied to a more traditional work environment. (see figure 3.1)*

#### Autonomy

As Dave Martorana stated, “I know I can go somewhere else and make six figures, but I’d rather be at Indy Hall, toil away and be my own man.” Every member at Indy Hall demonstrates a high level of autonomy. Most members choose to work for themselves, and in some cases at the cost of large differences in pay. For those at Indy Hall, this autonomy creates a natural drive to turn out high quality work for clients, as well as regularly launching creative collaborations for their own interests.

In traditional work environments, this level of flexibility and freedom is not always possible. A traditional environment has a greater organizational structure with more defined roles and specialized positions. So how can some of the autonomy benefits of Indy Hall be incorporated into a traditional work environment? Dan Pink suggests, people [employees] need autonomy over task (what they do), time (when they do it), team (who they do it with), and technique (how they do it). Companies that offer autonomy, sometimes in radical doses, are out-performing their competitors<sup>3,4</sup> (see figure 3.2).

3.4 Pink, D. H. (2009). Drive : the surprising truth about what motivates us. New York, NY, Riverhead Books.

An example of this could be asking employees or coworkers to collaborate on an informal project, and offer a financial incentive for the most innovative project.

Some companies have found some possible solutions to this. Google incorporated 20-percent time. Whereas Zappos which allows their call center employees to customize and to decorate their space and work free of scripts.

*Google 20-percent time allows employees to use 20% of their work week, the freedom to work on what they're really passionate about.*

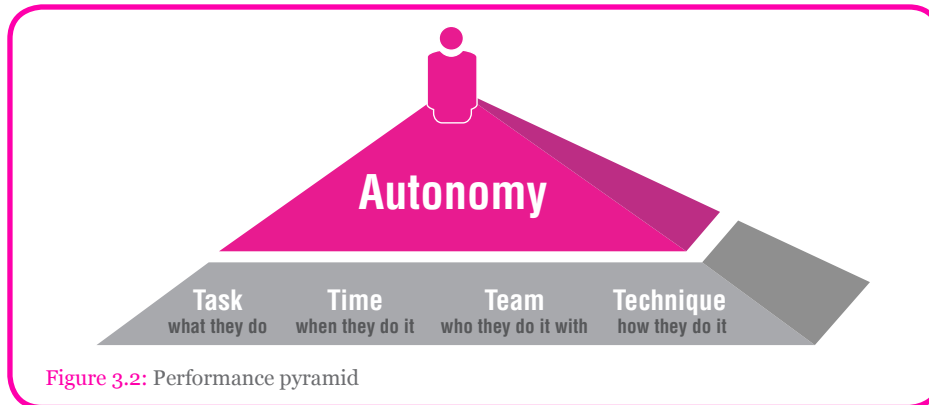


Figure 3.2: Performance pyramid

*Autonomy is the major component of a creative and productive employee.*

### **Trust**

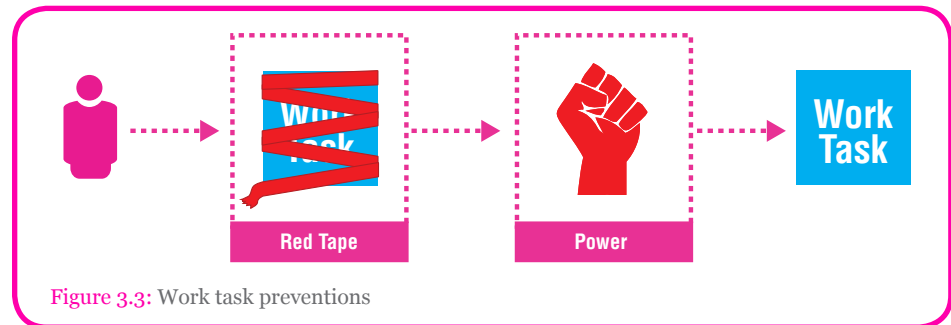
“In a corporate environment you are legally accountable, and there are crazy amounts of finger pointing, here you have this just get it done thing. I think it comes down to trust again and hand-offs are much smoother.” Each month at Indy Hall, multiple collaborative projects take shape or progress. This almost always occurs without heavy contracts, legal agreements, invoices or long drawn out meetings. No red tape. Workers just depend on each other to do their best and to come through for the project at the highest levels.

*Quote by Alex Hillman*

In a traditional work environment, this mentality is often dampened, by competition, fear of accountability and meeting pre-set job descriptions. As Alex Hillman states, “in a corporate environment you almost inherently don’t trust your coworkers because you are likely to be gunning after the same position”. Trust can be diminished by this fear and can cause power struggles for rewards. The project hits a snag during your part...and you run the risk of being the scapegoat.

*Quote by Alex Hillman*

These things, red tape and power are ultimately work inhibitors. If you are worrying about them, then you are not focused on turning a great work product (see [figure 3.3](#)).



So how do they squash this at Indy Hall? According to Alex Hillman, there are three basic, components that can be applied at any traditional work place right away .

1. When you create management for the sake of it, there's no way you're not over managing. [so don't] Try and find ways to help things manage themselves.
2. Don't create structures for the sake of creating structures.
3. Giving away power is really powerful.

### ***Collective purpose***

*Quotes by Alex Hillman*

“We all know that we’re happier and more productive together than alone.” Indy Hall members come from a wide range of industries and backgrounds and have vastly different work goals. However, they have a very simple mantra– “**working alone sucks**”. At Indy Hall, the purpose is to share a space together, and develop the best work possible. There are many great by-products, like collaboration, fun and social capital but as Alex Hillman puts it, its about a “...purpose and a point of view that’s higher than simply “desks and collaboration”.

In a traditional work environment, most often, the purpose is to get paid. Put in the time required by your superior, do what is expected of you and come in everyday. However this can stunt autonomy, morale and ultimately creative initiative.

So how can this be applied to a traditional work environment? We suggest, taking a few lessons from a Results Only Work Environment [ROWE]. The founders of R.O.W.E state that<sup>3,5</sup>,

Results-Only Work Environment is a management strategy where employees are evaluated on performance, not presence. In a ROWE, people focus on results and only results – increasing the organization’s performance while creating the right climate for people to manage all the demands in their lives . . . including work (see figure 3.4).

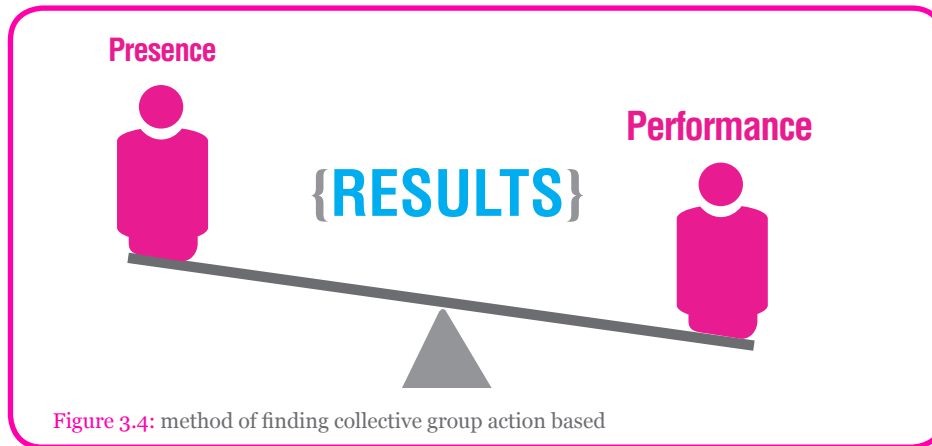


Figure 3.4: method of finding collective group action based

With ROWE:

- Teamwork, morale and engagement soar, which leads to less workers feeling overworked, stressed out or guilty.
- People are where they need to be, when they need to be – there is no need for schedules.
- There is no judgment on how people spend their time, so people at all levels stop wasting the company’s time and money.

ROWE companies include Wikipedia, Best Buy and many others.

### Community

“You’re not renting a desk, you’re renting your neighbors and a community.” Indy Hall members are very clear about this, and the space shows it. The space is not equipped with the latest office systems. The walls are not lined with corporate art industry awards. You don’t get supplied with a large monitor when you start a

From more information on R.O.W.E.s see [www.gorowe.com](http://www.gorowe.com) There you will find resources and help for converting from a traditional work environment to a results only work environment.

Research shows that performance is directly related to great results, whereas presence is not.

Quote by Parker Whitney

3.5 Results-Only Work Environment URL: [www.gorowe.com](http://www.gorowe.com). Date: 2010

membership, nor will you be given a tutorial on the sophisticated printer—because there isn't one. The most high-tech items available are the coffee machine and the dishwasher.

Quote by Dave Martorana

So why do members love the Hall so much? It's the community of coworkers. "We have a saying here that everyone comes in with the smartest kid in the room syndrome [since they've come from the corporate environment] and you get here and you're not the smartest in the room any more."

***In fact, one member, Jonny Goldstien described the Indy community somewhat like neurons in the brain—a complex series of connected networks moving information and generating reactions with amazing speed and efficiency. (see figure 3.5)***

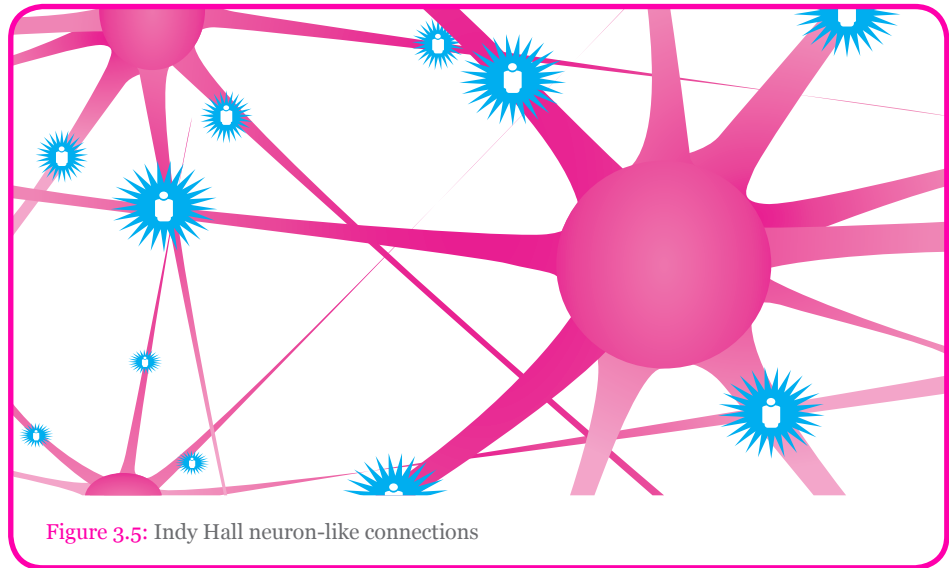


Figure 3.5: Indy Hall neuron-like connections

*Unconferences are participant-driven conferences centered on a specific theme or purpose.*

This offers a sense of clarity in the workplace that you do not always have access to in a traditional work environment. Importantly, this clarity also allows members to manage the anxieties of working together, permitting them to concentrate on more important things like side projects, friendships, starting or attending events, and unconferences.

So how can a community like this take hold in a traditional work environment? There is no one prescribed answer, but it starts by extending the work community outside of the walls of the workplace. There are many events that traditional workplace try to get employees involved with, such as happy hour, networking events, the annual company picnic. These ideas are a good start but in our experience, fall short in many ways.

A great example from Indy Hall was the forming of what we call "We Like" groups. For example, at Indy many members like coffee, so a few members ran a bracketed "Coffee-Off" [not unlike the N.C.A.A. Championship]. The goal was to



determine the exclusive coffee of Indy Hall, but three weeks later no winner had been decided. Why? It's not important. Psychologically speaking, it simply served as an effective way to get people together to talk, bond and possibly collaborate. Sounds silly? One member had this to say about coffee time at Indy "Just the ideas that developed over coffee was amazing."

*Quote by Randy Zauhaur*

## **Collaboration**

"At Indy Hall, unlike the corporate world, if you're working with someone on a project and it doesn't work out, you don't have to work with them on the next one. In the corporate world, you're stuck with that person and the relationship will get worse and you'll get less productive."

*Quote by Johnny Bilotta*

From our experience, coworkers don't have the luxury to exclusively choose who they work with in traditional work environments. In some cases these management-formed groups are successful, but this is most often due to good hiring choices and good team member placement. As any hiring professional knows, this process of getting the right individuals on the right teams can be a stressful and risky process. As Bill Mea, CFO of The University of The Arts States, "hiring is a part of my job that creates a lot of anxiety. I never know if I am hiring the right person until they have worked here for a few months."

*See section 5 for more info on our work with Bill Mea and the UArts Finance Office.*

So how is stress associated with forming groups avoided at Indy Hall? No one is hired at Indy Hall (apart from Parker), which allows business owners at the Indy Hall to avoid this aspect of the grouping process. However, individuals collaborate the majority of the time at Indy Hall. The collaboration process is purely elective, and there is a freedom that allows the collaboration process to occur and function more naturally. "There are just people here that I have difficulty working with. We're friends, but we just work differently, so we don't work together."

*Quote by Johnny Bilotta*

How can groups collaborate more effectively in traditional work environments? One way is to change the structure of the environment to be more open, flexible and similar to Indy Hall. However, while this would be the most effective means, it is a large undertaking to restructure an entire workplace, but an Australian software company, Atlassian has an interesting take on getting employees to collaborate.

As Dan Pink describes, "they [Atlassian] do something incredibly cool. A few times a year they tell their engineers, "Go for the next 24 hours and work on anything you want, as long as it's not part of your regular job. Work on anything

you want.” So that engineers use this time to come up with a cool patch for code, come up with an elegant hack. Then they present all of the stuff that they’ve developed to their teammates, to the rest of the company, in this wild and wooly all hands meeting at the end of the day. And then, being Australians, everybody has a beer<sup>3.6</sup>. (see [figure 3.6](#))

A FedEx day is structured as follows:

- 30min of brain storming
- Pair up with coworkers
- Project must be “something out of the ordinary”
- It must be deliverable in one day
- Support the teams with plenty of food and drink
- Meet up at the end of the day and present your work
- Serve chocolate cake and beer

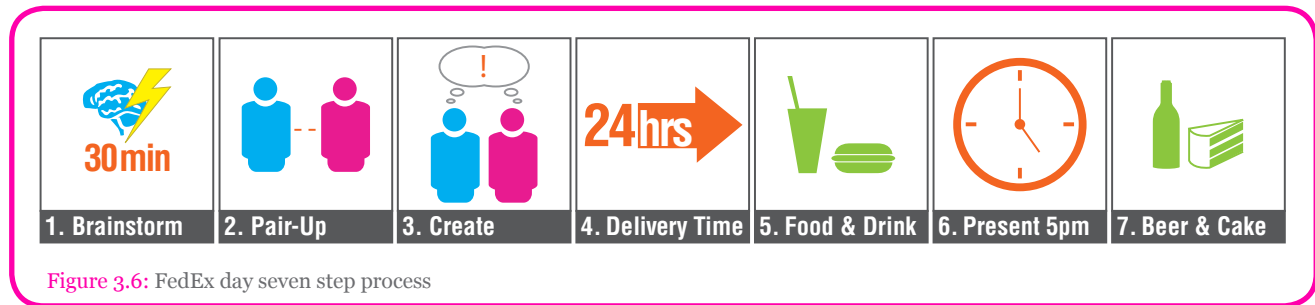


Figure 3.6: FedEx day seven step process

### Investment

“Every single time I take a step investing in somebody else, I’m also investing in myself.”

“A rising tide raises all ships. Everybody’s win benefits everybody in this ecosystem.”

Indy Hall is a rich environment for investment in oneself and others. This investment that Alex mentioned often serves a higher purpose than simply satisfying his own needs. As introduced earlier, this behavior is similar to what David Logan describes as tribe 4 mentality<sup>3.7</sup>. In a type 4 system, individuals often strive for goals and purpose that are larger than themselves. This type of behavior favors the development of creative initiative and as such, we would propose that investing in a purpose larger than one’s self would help sustain creative collaborations.

Quotes by Alex Hillman

3.6 The surprising science of motivation: Dan Pink on TED. com URL: [http://blog.ted.com/2009/08/the\\_surprising.php](http://blog.ted.com/2009/08/the_surprising.php) Date: 2009

3.7 David Logan on tribal leadership. URL: [http://www.ted.com/talks/david\\_logan\\_on\\_tribal\\_leadership.html](http://www.ted.com/talks/david_logan_on_tribal_leadership.html) Date: 2009

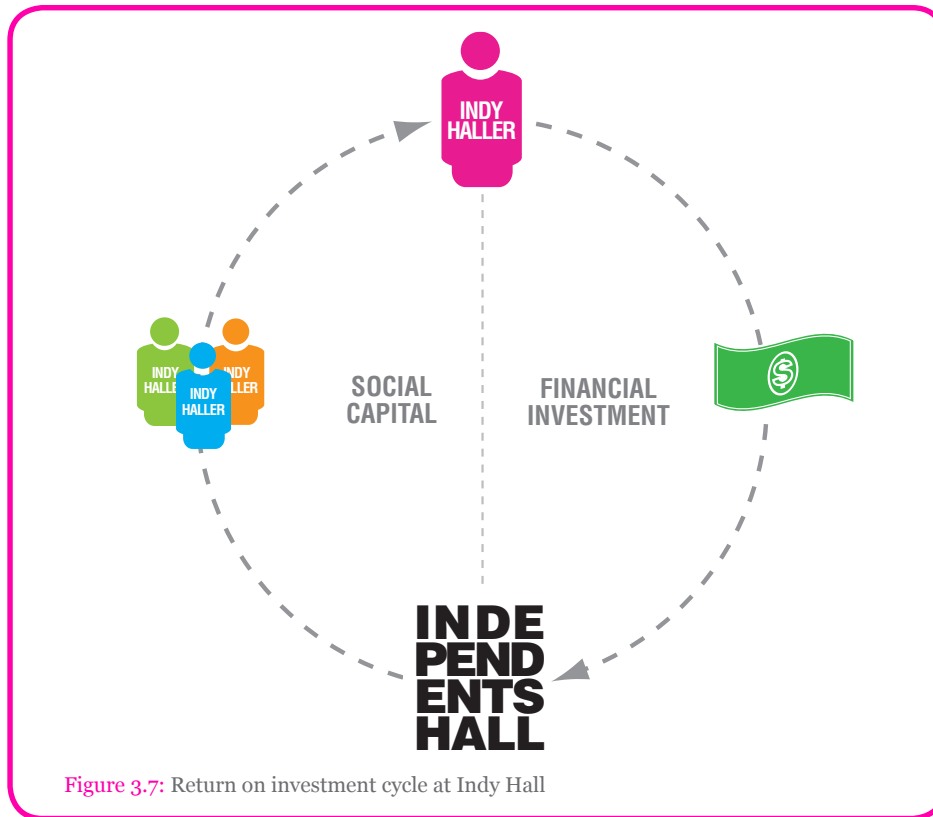


Figure 3.7: Return on investment cycle at Indy Hall

At Indy Hall this type of mentality creates a sustainable financial and social business model. By paying a monthly fee, members are provided with the space and technology required to do their work, and Indy Hall gets the money needed to pay the bills. In addition, by being a member at Indy Hall, members increase the social and knowledge capital of Indy Hall by offering advice, teaching skills or simply listening to ideas of other members. As Indy Hall succeeds, often so does it's members. This tribe 4-like behavior is essential to the innovative collaborations that occur at Indy Hall. (see [figure 3.7](#))

A system such as this generates a sense of ownership with rights relating to core business decisions. This creates a stronger bond between worker and business. This social capital is returned in the form of collaborative projects, better working practices and in most cases financial gains.

In a traditional work environment it can be difficult to generate this type of non-financial investment and sense of larger purpose. “Often times...the exercise of grappling with core business principles of rights and responsibilities and risks and rewards is a task reserved for a privileged few at the top of the organizational chart.”<sup>3.8</sup>

However, As Alex Hillman puts it, “the space is [also] an empowerment tool. We give aspects of the space to people so they can feel empowered, so they can take ownership.”

So how can a investment/ownership culture take hold in a traditional work environment? It can start with investing in employee ideas to boost creativity, and encourage innovation. Many of the most successful and most profitable projects from innovative companies like Google, started as projects that weren't in the company's vision. Some examples of this are Google Docs, Google Earth, and Gmail. Encouraging and supporting similar innovative projects within a traditional work environment can be simple.

**Bring visibility to the lack of investment.** If employees or coworkers feel that their level of investment and purpose in the company does not have a good return they will stop innovating and creating.

**Design an activity to generate investment and then turn the ideas into reality.** From previous chapters in this document, we know that the third drive humans have is— *to be creative*. However, if this creativity is not encouraged it will simply not happen. It can however be encouraged by designing a way for coworkers or employees to voice their ideas through group activities similar to Atlassian's *FedEx Day*.

**Evidence of the value on the investment.** In the business world, this is known as Return On Investment (R.O.I). If the R.O.I is not good, the investment is not likely happen, if it's high, people are more likely to participate. One way to encourage this is to invest in innovative ideas and turn them into reality. Seeing hard work and creativity turned into a benefit for the company or group, as well and being recognized for it, encourages more investment, innovation and in most cases financial gains for the company.

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3.8 Mackin, Christopher. (1990). Creating an Ownership Culture., Ownership Associates., The Journal of Employee Ownership Law and Finance., Oakland: National Center for Employee Ownership (NCEO)., Vol. II, No. 4, Fall 1990, pp. 79 - 94.

## **Conclusions**

Described above are the people, the psychology and practices of Indy Hall that we believe are key to its success.

Indy Hall encourages the coming together of people who appreciate that “working alone sucks.” By removing traditional management structures and allowing these inherently creative members the autonomy to direct their own lives, the result is often innovative and creative collaborations.

From our time and research at Indy Hall, we identified that coworking encourages Autonomy, Trust, Investment, Collective Purpose, Community and Collaboration. These were important aspects that directly influenced our further work with the collaborative groups, Vizthink Philadelphia, UArts Finance Office and The UArts academic transformation described in the following sections.

# VizThink Philly

*Visualizing Collective Purpose*



# Vizthink Philly

## 4.1 Introduction

During our time at Indy Hall we were approached by Jonny Goldstein, founder of Vizthink Philadelphia, to help visualize and find collective purpose at a Vizthink Philly workshop. We agreed since in addition to the great opportunity itself, it would also be a great venue to prototype and test the robustness of a collective purpose tool we were developing for the Finance project.

*VizThink is gathering visual thinkers from all corners of the world to create the first global community dedicated to the use of visualization in all forms of learning and communication.*

For more information visit [www.vizthink.com](http://www.vizthink.com)

## 4.2 Development

In order to find a collective purpose, we would have normally interviewed the attendees prior to running a workshop. However, we had no prior opportunity to interview the participants of Vizthink Philly. Therefore, since the majority of participants attend to improve visualizing skills, we thought it would be safe to use statements related to common visual issues and concerns. We tried to keep these statements as broad as possible. This would make it more likely that some aspect of them would be applicable to the participants. The overall aim of the workshop would be find a collective visual need within the group. This could then be used by the Jonny to plan future Vizthink workshops.

Example statements included:

- *My lack of visual skills are holding back my business*
- *Visualizing information would help me overcome a roadblock in thinking*
- *I want to improve my visualizing skills*
- *I'd like to use visuals to get more clients*

In order to run a collective purpose game, each participant received 10 different statements on colored post-it notes. In addition, they also received two blank Do-It-Yourself (D.I.Y.) notes, where they could write a specific visual concern or need they had.

Prior to the practical aspect of the workshop, we first introduced the theory and method of finding collective purpose. This helped participants understand the process and the potential of the tool. We then handed out sets of post-it notes to the group, 5 people in total, and told them to organize them into:

1. No more than 6 strong interests
2. Concerns of smaller interest
3. D.I.Y. (Individual interests)

Since we knew of the importance of interacting physically with tools, we then asked each participant to draw an avatar (themselves in simple form) on a white board. To this, they were then asked to attach the strong interests to the head portion, and the smaller interests to the body. Once complete, everyone was encouraged to take a step back and examine how everyone else had organized their cards.

*This diagram shows the method we used to help the VizThink group find a collective purpose.*

Next, each individual transferred their strong interests to another white board where we had drawn a five-pointed star within a pentagon. This was drawn to help find the shared interests and group collective purpose. In the process of finding common concerns, the group interacted with the post-its, without direction from us, and began organizing them organically (see [figure 4.1](#)).

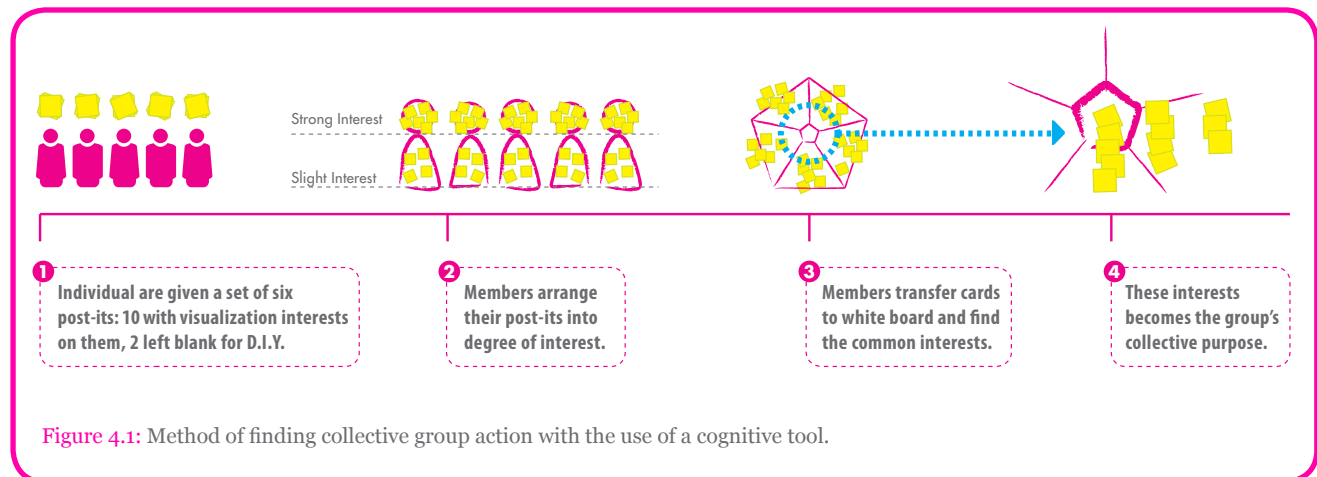


Figure 4.1: Method of finding collective group action with the use of a cognitive tool.

### 4.3 Results

From a group of five people, one collective purpose, where everyone had the same concern as a strong interest, was found. As we predicted, this common interest was placed in the middle of the star. However, unexpectedly, participants then began to organize the remaining post-it notes into groups of four, three and two within the vicinity of the pentagon. Finally, they placed the single interests in the outskirts of the pentagon.

In retrospect, one of the most intriguing aspect for the workshop was the language that the participants developed to describe the categorization of interests.



The few topics the group strongly agreed on (5 or 4 matches) were called **Essentials** because it was clear that everyone or most people had strong interest in that topic. Next, the topics that had an intermediate interest (3 matches) were called **Differentiators**, because they were very important but did not have the unanimous interest of the group. Finally, the D.I.Y. topics were called **Exciters** because they were unique, desired and therefore open to exciting development and creative solutions.

An additional exciting aspect of the VizThink workshop was reading the VizThink blog post submitted by one of the participants. She clearly articulated the exact purpose of the event, even including some of the technical terms that we use internally to design our tools. Included here, is the write up and a few photos with captions.

**Recap: VizThink March**  
**March 23, 2010 – 9:23 am**  
**by Julia Pellicciaro**

Have you ever had to sit through an unengaging, unproductive meeting? Or started a project only to realize halfway through that what you are working on is not what the client actually wanted (even though they said it was)?

At the March VizThink Philly, second year UArts MID grad students Justin Witman and Fraser Marshall gave a workshop on using visual tools to hone in on a group's collective purpose.

Using a methodology they call Humantic Design, Justin and Fraser use an Agile-style iterative design process to help people working in groups recognize their common goal and work toward achieving it. The collaborative tools that come out of this process are usually cognitive artifacts—an artificial device used in the process of thinking, remembering or problem solving. Some cognitive artifacts we use daily are to-do lists and calendars. Some successful cognitive artifacts created by Justin and Fraser include role-playing cards, and a card-sorting system.

When group members are in the creative process, they have a greater investment in desired outcome, and therefore in the creation of the tools. As the project progress, their investment increases, their anxiety decreases.

*At the end of the workshop there was significant interest and the results it delivered. Below are a few quotes from the group.*

*“A truly inspiring night.”*

*“I’m going to take this concept to work with me tomorrow.”*

*“Definitely left with some good ideas that I can apply on the job.”*

“Justin and Fraser walked VizThink participants in a mini version of their process. Normally, they would conduct interviews with everyone involved. However, in the interest of time, they brainstormed what they thought might be some common goals of VizThink members and attendees.” (Julia Pellicciaro).

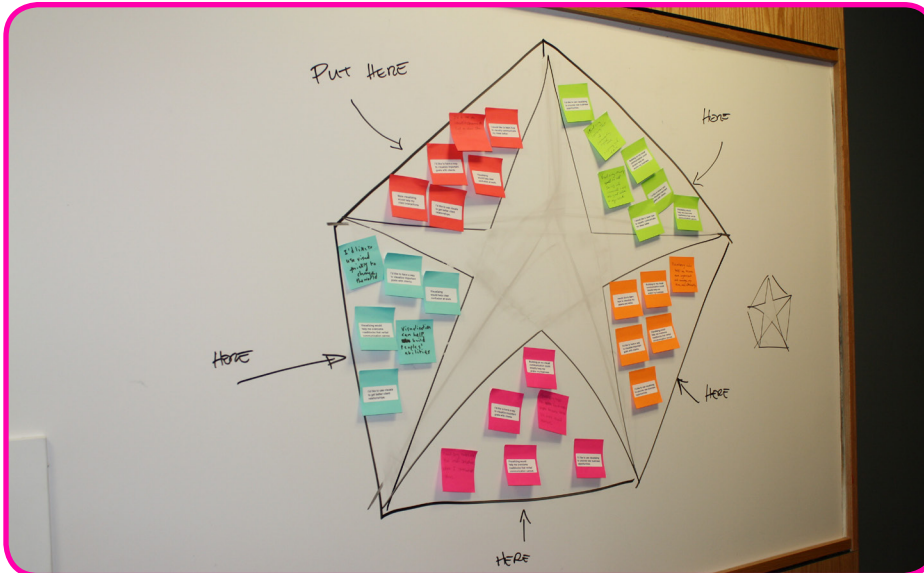


“First, from the stack of post-it notes we were given, we each chose the six most important goals related to visual thinking. If one of our goals was not listed, we had two blank post-its for defining custom goals.” (Julia Pellicciaro).





“Next we stuck them to a drawing on white board, with the most important in the head, and the least important in the body.” (Julia Pellicciaro).

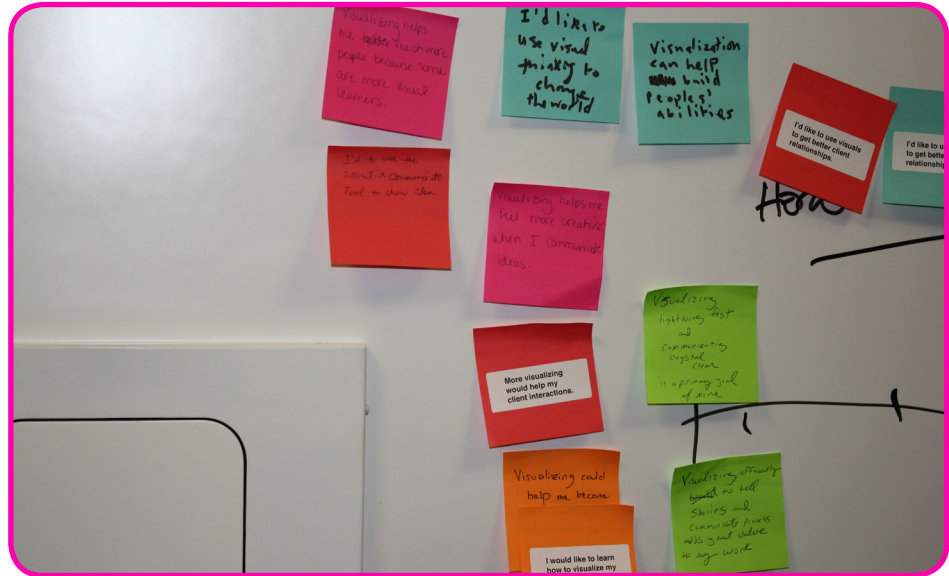


“Finally, we pulled out the ‘greatest common’ goals that proved to be thematic in the group.” (Julia Pellicciaro).



*“Within half an hour from when we started, we had identified a goal common to all VizThink attendees. (Julia Pellicciaro).*

*‘Visualizing would help me overcome roadblocks that verbal communication cannot.’ (Vicent Matyi, Vizthink attendee).*



#### 4.4 Analysis and Conclusions

As mentioned, upon analysis of the workshop, most intriguing to us was what we learned from the group. We leaned how to categorize the interests. Specifically, definite requirements are **Essentials**, those that need serious consideration are **Differentiators**, whereas unique interests open for discussion are **Exciters**.

**Essentials:** These are the items that most participants agree on. Because they are represented by majority decision, these items are essential to the work-task and cannot be ignored or down played. Interestingly, while these items are seen as essentials, they can be put aside to focus on the next level interests.

**Differentiators:** These are the interests that are common to, but not shared by everyone in the group. For example, if an issue is of interest to only 30% of the group it is not essential yet it can also not be ignored. These differentiators should be discussed and related to other interests that share a similar point of view. This can often lead them to be part of a majority interest.

**Exciters:** These are the individual interests developed via the D.I.Y cards. These are individual interests that are created by single group members to express personal interests not represented by the provided topics. Because of their originality, exciters can be the topics of innovative discussion. These are unique, desired and therefore open to exciting development and creative solutions.

Another important lesson from the workshop was how people interacted with the post-its, without our direction, to find common interests. Since this happened intuitively, perhaps the collective purpose tool *affords* finding common themes. The term affordance comes from the ecological psychologist Gibson, who was the first to frame affordances as unified relations between the environment and an actor<sup>4.1</sup>. “The affordances of the environment are what it offers the animal, what it provides or furnishes, either for good or ill”. Affordances can be explained as action possibilities that actors have in the environment. That is, an affordance exists relative to properties of the environment and the action capabilities of the user<sup>4.2</sup>.

Having the opportunity to “dry run” the complete collective purpose system with a test allowed us to apply new insight that would have not been otherwise included in the design for the Finance Office. For example, we learned that the wording of the statements was especially important. If they were too vague, people became confused about what the statements actually referred to. On the other hand, if the statement became too specific, important concerns were ignored because participants believed they were not relevant.

Overall, the workshop was a great opportunity to test our concept and first prototype of the collective purpose game. The theory was understood by everyone involved and the positive comments (see side bar) we received supported the robustness of our design concept.

- 
- 4.1 Gibson, James J. (1977), The Theory of Affordances. In *Perceiving, Acting, and Knowing*, Eds. Robert Shaw and John Bransford
  - 4.2 McGrenere, J., & Ho, W. (2000). Affordances: Clarifying and evolving a concept. Proceedings of Graphics Interface. PDF: [http://www.cs.ubc.ca/~joanna/papers/GI2000\\_McGrenere\\_Affordances.pdf](http://www.cs.ubc.ca/~joanna/papers/GI2000_McGrenere_Affordances.pdf)

# The Finance Office

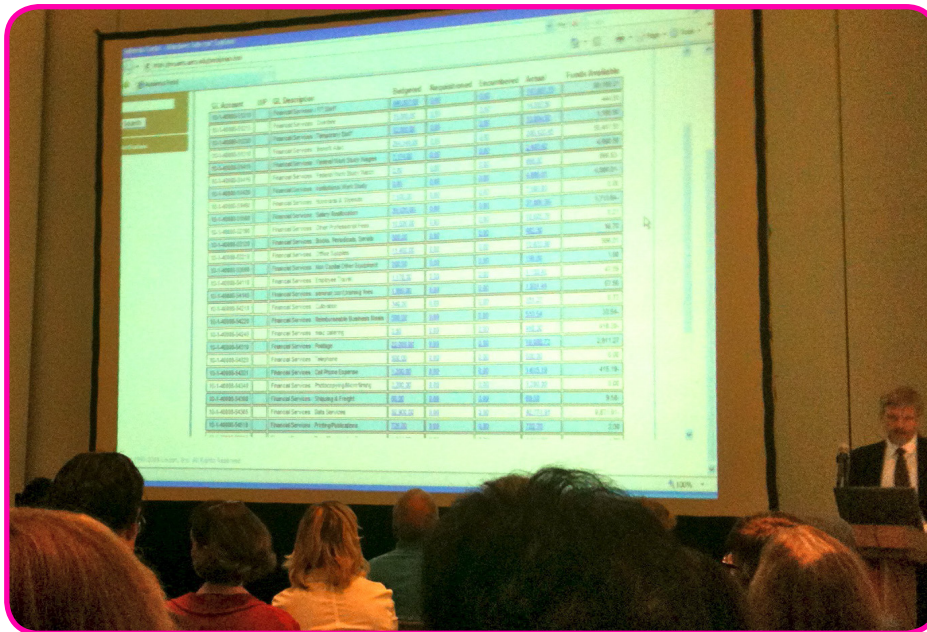
*Designing Collective Communication*



# The Finance Office

## 5.1 Project History

This project started as a collaboration between the Bill Mea, the CFO of the University of the Arts (UArts) and a team of designers from the Masters of Industrial Design department in Fall 2009. The original aim was to help Bill communicate financial information to the school community at his biannual financial presentations. Before our involvement in the project, Bill presented information through spreadsheet layouts, however he believed this was leading to a lack of understanding and confusion.



*Standard financial presentation prior to our work with the Finance Office.*

Our initial approach in this project was to create a more visual method of financial communication (see figure 5.1). Spreadsheets spoke in a detail orientated left brain fashion, and as such, did not deliver information in a style attuned with the majority of visually dependent faculty employed at UArts. Working with Bill, we identified the important information he wanted to communicate. We then created an initial prototype of infographics that would hopefully decrease the cognitive load associated with understanding financial information and language.

**An example of the first prototype of financial infographics prepared for Bill Mea.**

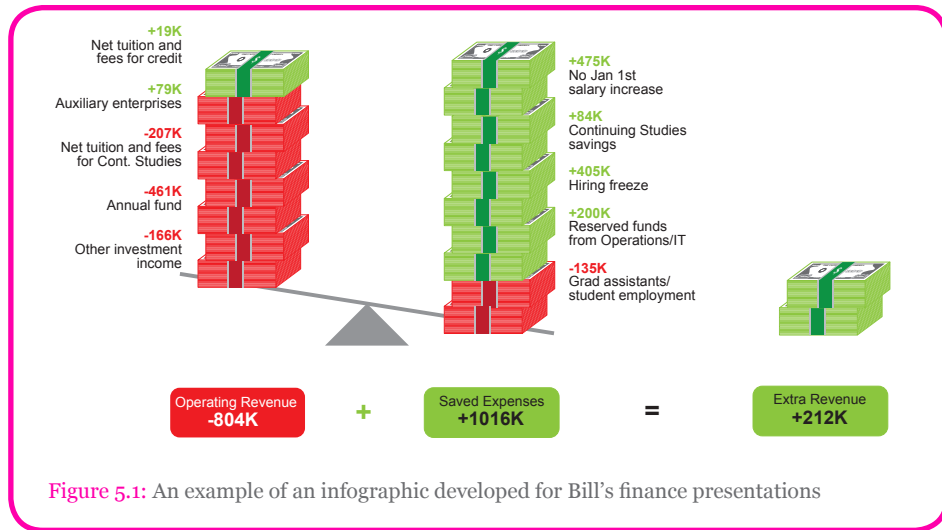


Figure 5.1: An example of an infographic developed for Bill's finance presentations

Although Bill was pleased with our efforts, our first prototype was met with a less than enthusiastic response from the school community. It was clear that there were still many anxieties that had not been addressed by the new presentation format.

## 5.2 Project Development

Although Bill was the initial client, the audience through their lack of enthusiasm for the first prototype, became additional stakeholders in the project. Therefore, we conducted a series of interviews to better understand the anxieties at play within the community. This identification of new stakeholders in the project is very similar to that observed during Transformation design, and as such, they were imperative to the progression of the project.

### New stakeholders:

1. Faculty member and graphic designer: Larry Bach
2. Faculty council chairman: Jack DeWitt
3. Faculty council members: Anna Beresin, Mary Martin, Amy Feinberg and Peter Rose

From our interviews it was clear that confusion surrounding financial communication, individual motivation and issues of authority were causing anxiety within the faculty. This was no surprise, as the school had recently asked

*Often, the development of designs also relies heavily on not simply, the user but also all key individuals involved in the process. These key individuals are called stakeholders and are equally important to the process as a whole<sup>54</sup>.*

5.1 Design Council-RED PAPER02 Transformation Design, 2006



the faculty to make substantial sacrifices by accepting cutbacks in benefits and pay increases. This had caused anxiety regarding job security and also prompted many questions regarding the content of school financial communication, individual job motivation and issues of power.

For example, many of the interviews used language associated with authority, leadership and lack of power. Terms such as, “trust”, “goodwill”, and “no voice” were used frequently. Furthermore, in interviews Bill mentioned that his relationship with the faculty was very similar to that between a parent and child. It was clear that much of anxiety related to the psychology underlying the relationship between the Finance office and the Faculty. Therefore, the tools and scenarios we created were directed at bringing voice to such issues, sharing concerns and building trust.

Both parties had indicated during interviews that they would like to start a dialog about financial communication. Therefore, similar to the tools we prototyped with Vizthink Philly, we designed a collaborative meeting structure that we hoped would form a group with the collective purpose of improving financial communication. The information that we gathered was used in Bill’s next upcoming financial presentation. This allow both groups to specifically address some of the major concerns regarding financial information.

### **5.3 Method**

When individuals come together to form a group, they often experience anxiety regarding the propose of the group. Since current anxieties and concerns were likely to be the main source of financial communication needs, we wanted to help Bill and the Faculty communicate these to each other. The importance of this has been shown before in group dynamic research, as giving voice to one’s needs before joining a group helps create a support structure within the group that promotes trust and collaboration<sup>5.2</sup>.

Furthermore, the meeting was designed to clearly define the purpose of the group so Bill and the Faculty could be sure that their individual goals were part of the collective purpose. After the success of the Vizthink workshop, we were confident of applying this level of group psychology into the design of group collaboration.

At Indy Hall, Jonny Bilotta was quoted as saying “...I had seen how he worked and I knew he worked hard. I got to see he worked his ass off, I got to see the quality. I was around other people at Indy Hall, but I never saw that work.” This

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5.2 Smith, K. K. and D. N. Berg (1987). Paradoxes of group life : understanding conflict, paralysis, and movement in group dynamics. San Francisco, Calif., Jossey-Bass., p.109.

was common at Indy Hall, members had the opportunity to observe each other and build trust and dependencies. However, Bill and the majority of the Faculty had little previous opportunity to build the mutual trust and dependencies that are required for successful collaboration. Therefore, we had to create a support structure within the group to promote trust and collaboration. Since giving voice to concerns can be a difficult and cognitively intense task, a more tailored collective purpose tool was created to voice concerns and identify the group purpose. This was achieved in two steps:

1. Allowing each member to voice their concerns and dependencies to the group.
2. From these concerns find a collective purpose for the group to collaborate.

Without taking this into account, our efforts to form a group would likely fail. If members feel that their point of view is not important to the group, authority dependence anxiety and basic assumption behavior may result. Furthermore, finding a collective purpose would also help ensure that the function of the group satisfies the needs and motivations of all its members<sup>6.3</sup>.

In order to achieve this, we further refined the collective purpose tool designed for Vizthink Philadelphia. For the Finance and Faculty, we wanted to create an interactive tool aimed at voicing individual concerns. However, this time we designed a series of cards with financial related statements taken directly from previous interviews with the Bill and Faculty council members. We also provided D.I.Y cards, so Bill and the Faculty could write down any specific concerns they had that we're not included in the set we had created.

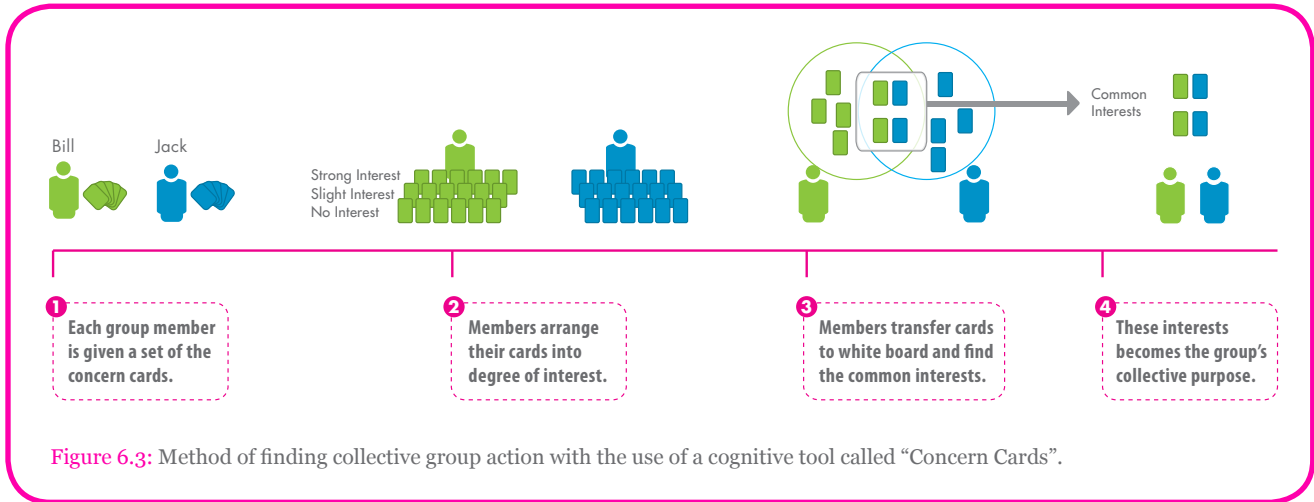
In order to make the task as visual and interactive as possible, three factors were considered.

1. A tool to voice concerns and anxiety allows members to overcome the anxieties associated with joining groups. By using this tool, the cognitive load associated with remembering and voicing concerns would be diminished.
2. Create a visual map to demonstrate each other's dependencies and concerns.
3. Create a visual map to help demonstrate common interests. This will allow group members to find the collective purpose of their own group.

These tools would act as cognitive artifacts by making it easier to select concerns and anxieties regarding financial communication. By changing the nature of the task from remembering and voicing one's concerns to playing a game, we created a situation that reduced anxiety and difficulty associated with joining a group on numerous levels (see [figure 5.3](#)).

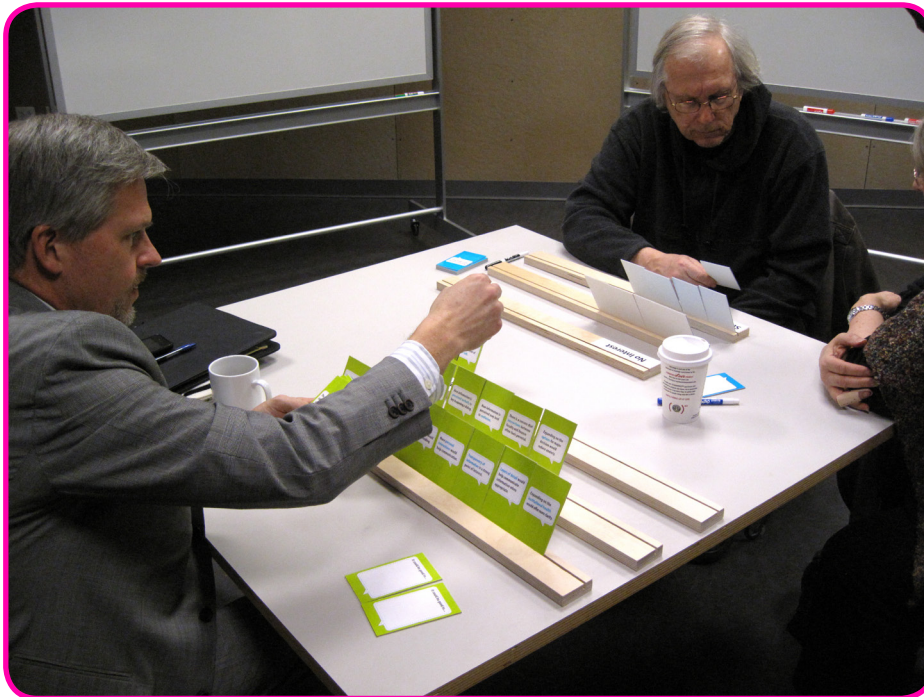
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6.3 Luft, J. (1970). Group processes, an introduction to group dynamics. Palo Alto, Calif., National Press Books.



**Figure 6.3:** Method of finding collective group action with the use of a cognitive tool called “Concern Cards”.

Similar to Vizthink, Each group received a set of cards were then asked to arrange the cards in order of Strong Interest, Slight Interest and No Interest.



*Bill, Jack and Mary work on prioritizing their interests from the information pulled from interviews*

Once the cards were arranged, the groups were then be asked to transfer them to a board where they began comparing each other's categorizations. In doing this, each member could share and voice their individual concerns and anxieties

*Bill Jack and Mary, finding collective interests.*

*Bill pointed out that our design essentially changed the nature of the task.*

*Changing the nature of the task is the goal of a cognitive tool and if successful, will make a difficult task more simple.*

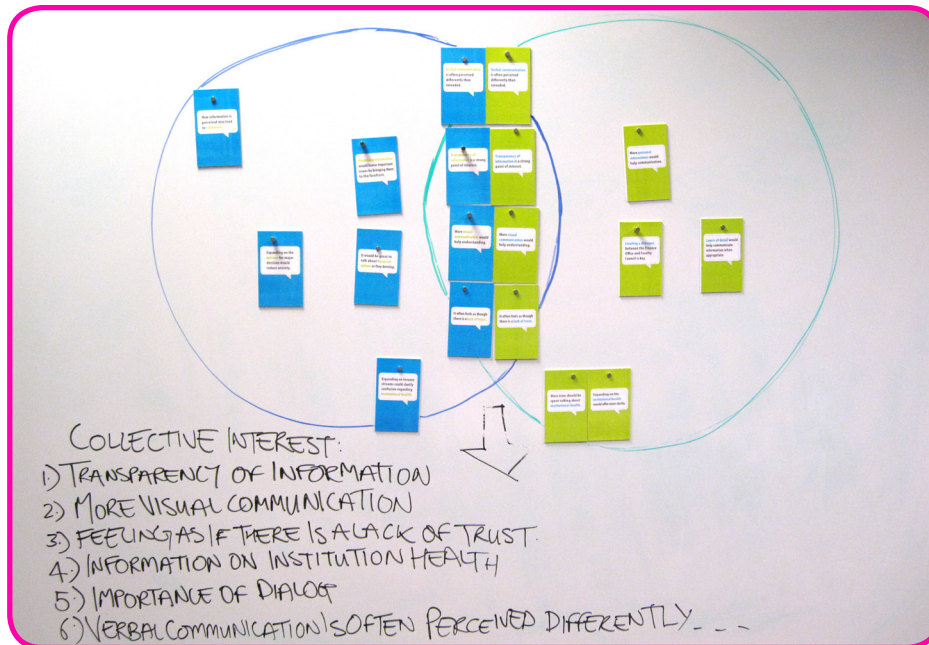


The next step was to identify the cards that each group has selected as a strong interest. We then used these interests and concerns as starting points for forming the collective purpose of the group. This ensured that the purpose of the group was something that both groups were invested in achieving, and thus, they successfully collaborated together.

#### **5.4 Results and Analysis**

Overall the meeting was a success. Both groups were surprised to discover that they shared more common interests than they had previously thought (see figures 5.3 and 5.4).





*Bill, Jack and Mary found four areas where they shared a collective interest, and three areas where they shared common interests.*

The collective interests that were discovered by the groups fell in to the Essentials and Differentiators categories, as introduced earlier in section four. These included:

#### Essentials:

1. It often feels like there is a lack of trust.
2. More visual communication would help understanding.
3. Transparency of information is a strong point of interest.
4. Verbal communication is often perceived differently than intended.

#### Differentiators

1. Common theme of Institutional health.
2. Common theme of more dialogue.
3. Common theme of information design.

Interestingly neither Bill nor Jack and Mary used the D.I.Y. cards. We hypothesized that this may be either due to confusion over their purpose, or perhaps anxiety about fully disclosing personal concerns at this stage in the process.

## FINDING COLLECTIVE PURPOSE RESULTS

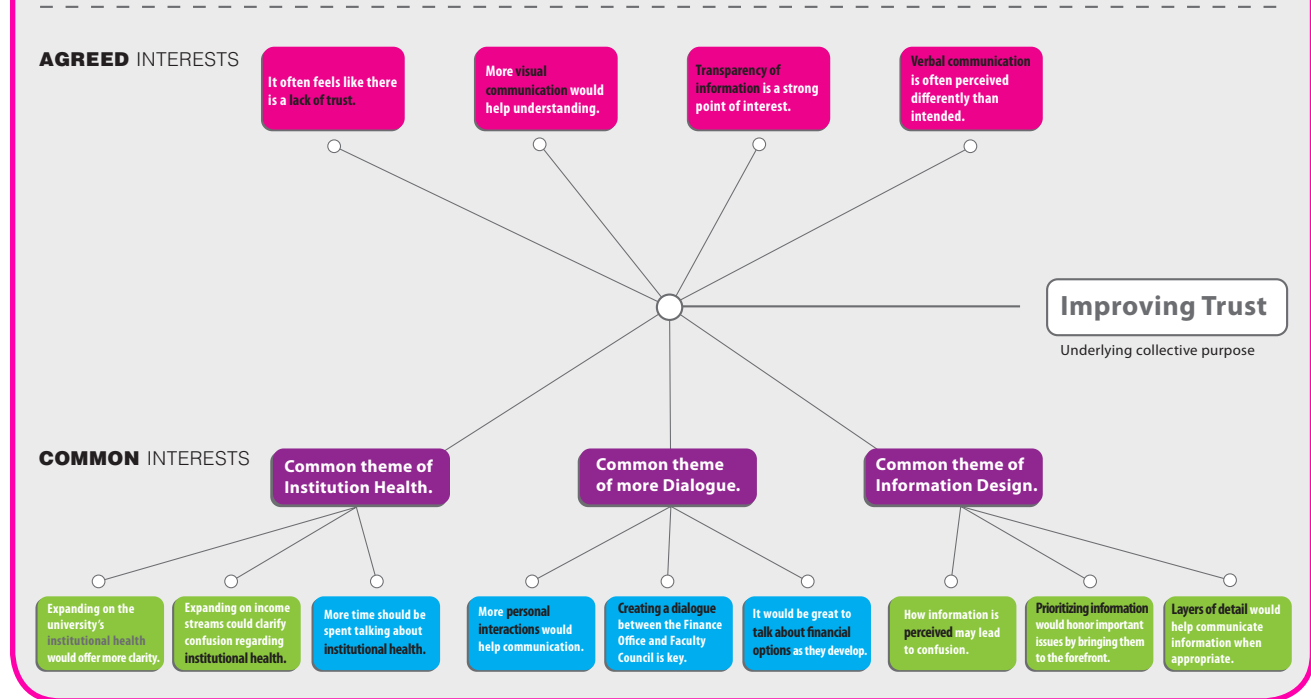


Figure 5.3: Results of Finding Collective Purpose meeting

Once the group had identified collective interests and common themes, they agreed that improving trust was an underlying theme between all of the selected cards. Importantly, as we observed in Indy Hall, trust between group members is key to a creative and mutually dependent relationship. Therefore, we would recommend that any future designs targeted for the group should continue to provide a structure that supports building trust and dependency.

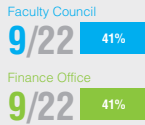
Much like Vizthink Philly, once the cards were transferred to the white-boards, both groups started interacting with them immediately. Mary in particular went directly to the board and started to move the cards around to match common strong interests. This further supported our theory that the design of the collective purpose tool afforded interaction and finding common themes.

Furthermore, the physical interaction required to play the collective purpose game

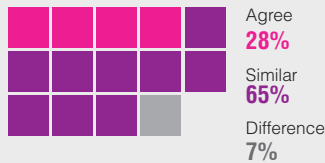
# FINDING COLLECTIVE PURPOSE ANALYSIS

## Strong Interest

### WHERE THE CARDS FALL



### SEEING EYE TO EYE

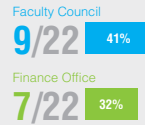


### THE BIG PICTURE

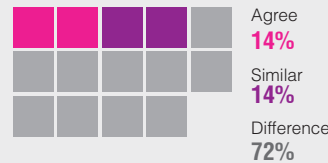
**93%** COLLECTIVE AGREED & SIMILAR INTEREST

## Slight Interest

### WHERE THE CARDS FALL

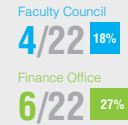


### SEEING EYE TO EYE



## No Interest

### WHERE THE CARDS FALL



### SEEING EYE TO EYE



- TRANSPARENCY OF INFORMATION
- MORE VISUAL COMMUNICATION
- FEELING AS IF THERE IS A LACK OF TRUST
- INFORMATION ABOUT INSTITUTIONAL HEALTH
- IMPORTANCE OF A DIALOGUE
- COMMUNICATION IS OFTEN PERCEIVED DIFFERENTLY

Figure 5.4: Analysis of Finding Collective Purpose meeting

was important in helping Bill, Jack and Mary manage their anxieties of discussing school finances. Since financial issues were so important to the group, there was prior anxiety over attending this meeting in the first place. Additionally, there was additional anxiety due to being in a situation where authority was different (we were the authority). As such, the game satisfied their basic need of managing anxiety associated with authority dependence. Therefore, we helped the group design an innovative solution to group collaboration not created before. Indeed, Bill said he had initially come to the meeting “expecting to duke it out with Jack ... and here I was surprised to be presented with cards and a game”.

With the data from the collective purpose meeting we designed the second iteration of the finance presentation graphics (see figures 5.5 and 5.6).

## Finance Presentation Prototype 2

The following images are samples of the Financial Presentation designed with new information derived from the collective purpose meeting.

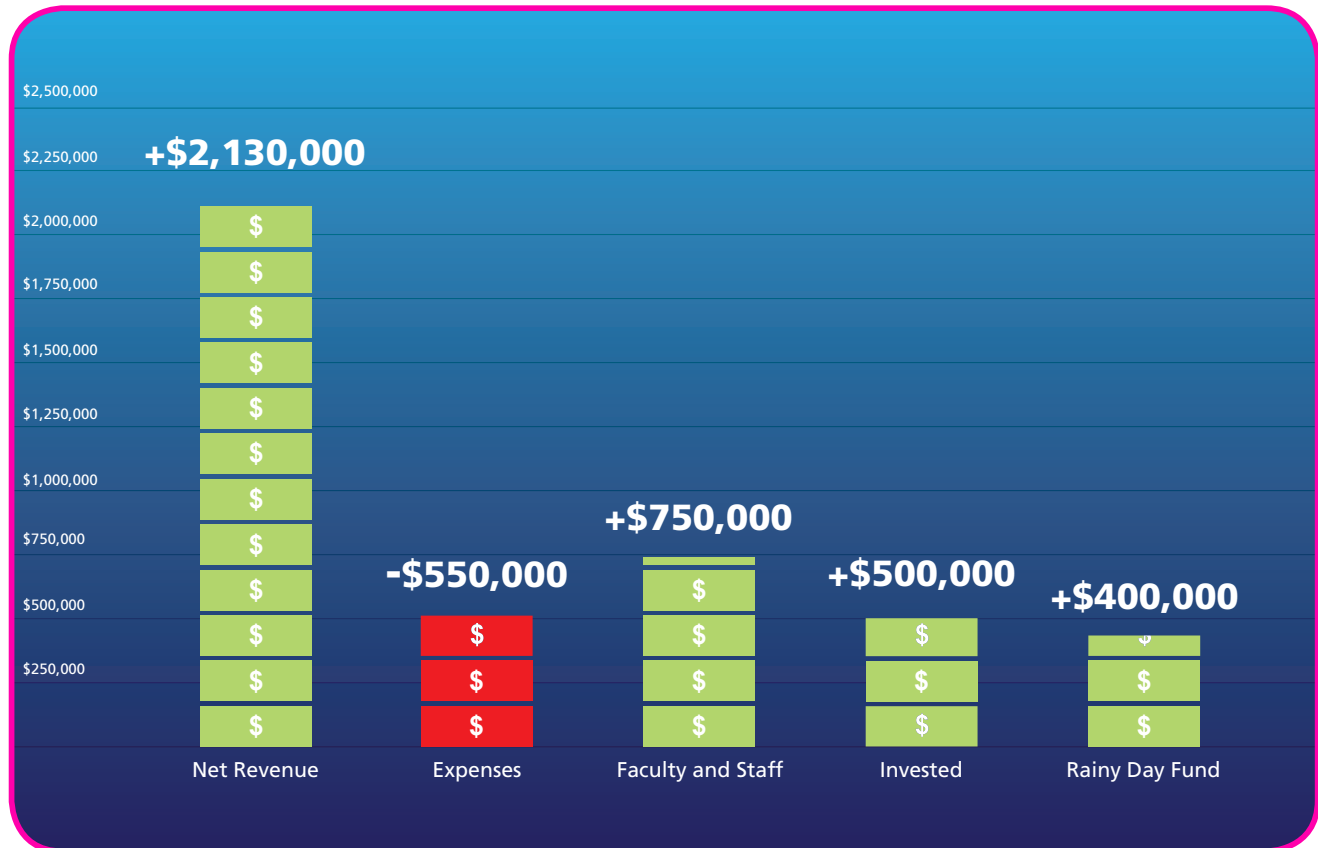


Figure 5.5: Financial presentation after collective purpose meeting– slide sample.

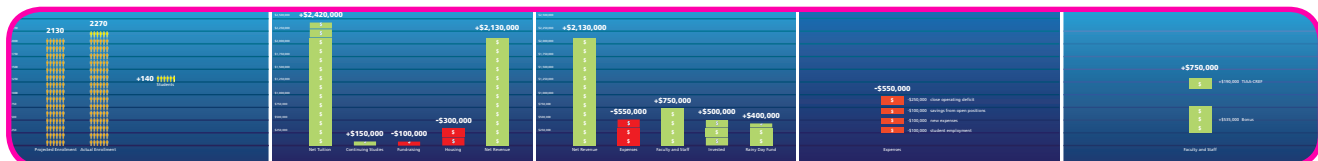
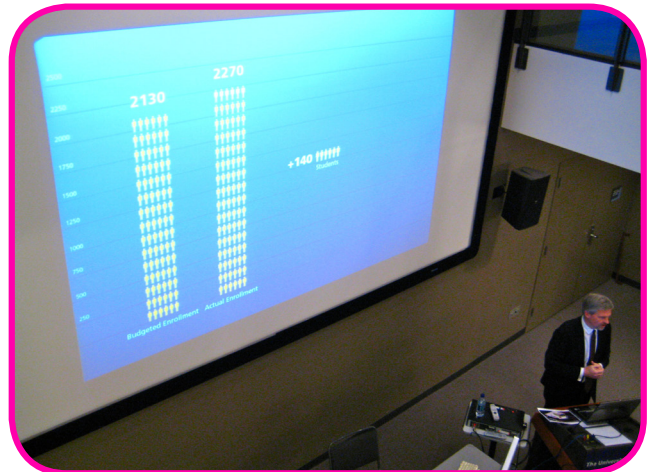
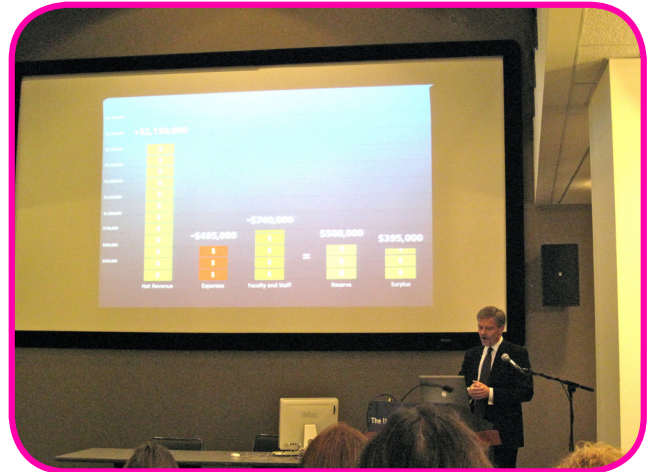


Figure 5.6: Financial presentation slides after collective purpose meeting.





*Bill asked the audience what they thought of the presentation, one audience member replied “much better”.*

*The conversation started at the collective purpose meeting lead us to suggest particular content Bill should cover in his presentation. One of our suggestions, was talking about pay raises, rather than gifts. This brought out a “woohoo” from an audience member.*

## 5.5 Next Steps

As shown earlier in our Method section (see [figure 2.1](#)), the Humantic design process has three phases of cognitive tool development:

1. Articulation Tools - to clarify points of entry and areas of opportunity.
2. Anxiety Tools - to manage a group's weaknesses and strengths.
3. Ambition Tools - to help the group drive future success and sustainability.

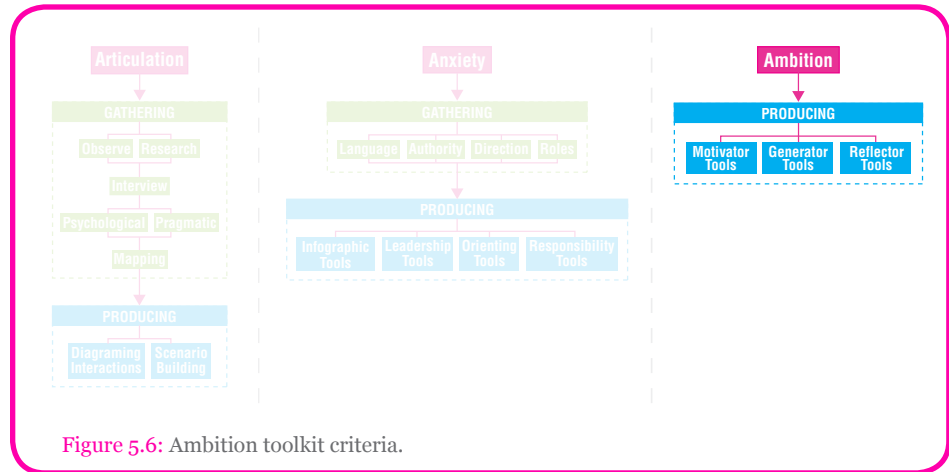


Figure 5.6: Ambition toolkit criteria.

Our relationship with the Finance Office and Faculty group is in the third phase of working together. We have co-designed with them two iterations of financial information graphics and have set the stage for collaboration by helping them discover common interests and a collective purpose. In order to maintain momentum and trust building, the next stage in the project was the creation of an Ambition Tool kit. Ultimately, this kit should help maintain drive and motivation without guidance from a design team. This Ambition Toolkit has three sets of tools that address specific areas of group dynamics required for a sustainable collaboration.

These three sets of Ambition Tools are as follows:

### 1. Motivators:

The aim of Motivator Tools is to create an experience that helps individual members set a long lasting goal for the group. Motivator Tools are meant to establish a common vision and a greater purpose for the group. Additionally, the

more public a group makes their goal, the higher the level of motivation. Setting the bar high motivates the group to reach for the most optimal outcome.

The main Motivator tool is the group sentence. We previously used this tool to great success in the initial collective purpose game and we believe it can continue to help the group define it's direction and goal.

## 2. Generators:

These tools act as prompts to begin starting a work task when individuals come together as a group. Most often this tool will help group members communicate ideas, creative solutions, personal interests and ultimately offers a good starting points for discussing important issues.

An important aspect of the generator tools is that they also offer a way to continue voicing concerns and dependencies. They are based on the success of the cards that we initially prototyped at Vizthink Philly. Our hope it that by recording interests and concerns on publicly visible cards, they can subsequently act as a tool to start conversation and discussion.

However, as discussions develop there may be the potential for certain group members to take charge or dominate the conversation. Therefore, in an attempt to counteract this, we also designed an authorizing tool. This tool is based on the previously introduced theory that a group functions best when individuals are authorized by group members to lead when it is most beneficial to the success of the group. Since both research and evidence from Indy Hall suggested that monopolizing power is detrimental to group success,<sup>6.4, 6.5</sup> it is hoped that this tool will help the group rotate and authorize others as necessary.

## 3. Reflectors:

After a group has used the Generator Tools to address and participate in the work task, they then use Reflector Tools to determine the success of their effort. Reflectors are essentially self assessment tools that help group members record their overall strengths and weaknesses. They then rate these interactions and shortcomings on a quality scale, accordingly. By recording these perceptions in a visual manner, the nature of the task is changed, allowing individuals and the group to see the opportunities for future improvement.

Collectively, these tools are to be used with a Milestone Map that outlines the

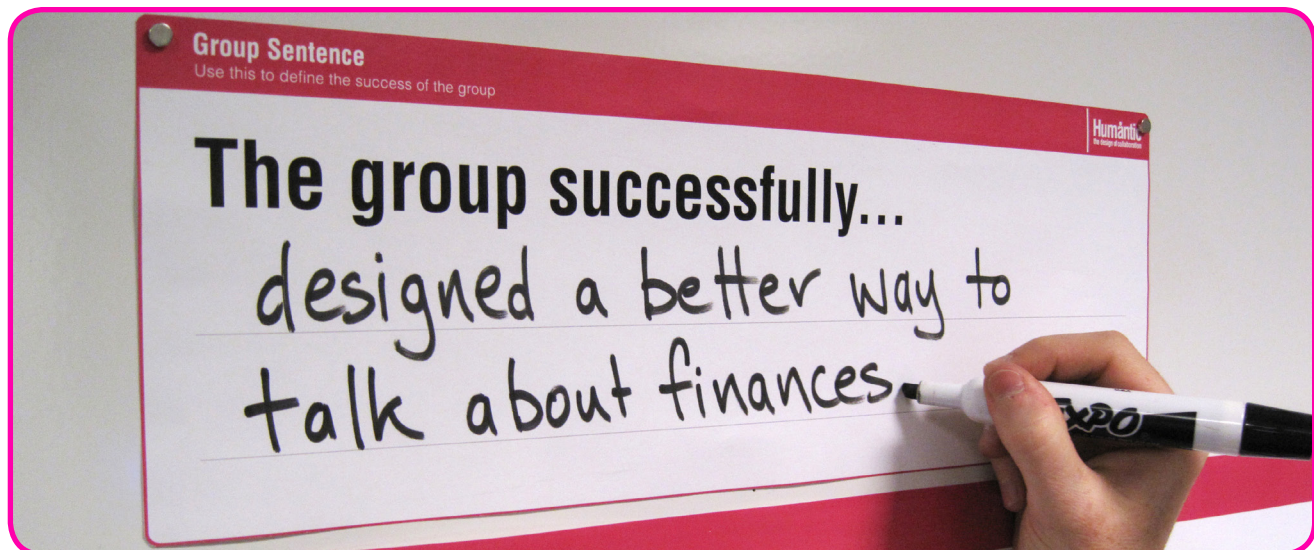
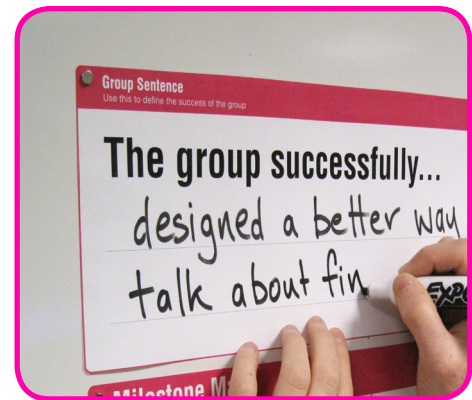
- 
- 6.4 Alex Hillman: Giving away power is really powerful.
  - 6.5 Smith, K. K. and D. N. Berg (1987). Paradoxes of group life : understanding conflict, paralysis, and movement in group dynamics. San Francisco, Calif., Jossey-Bass., p.198.

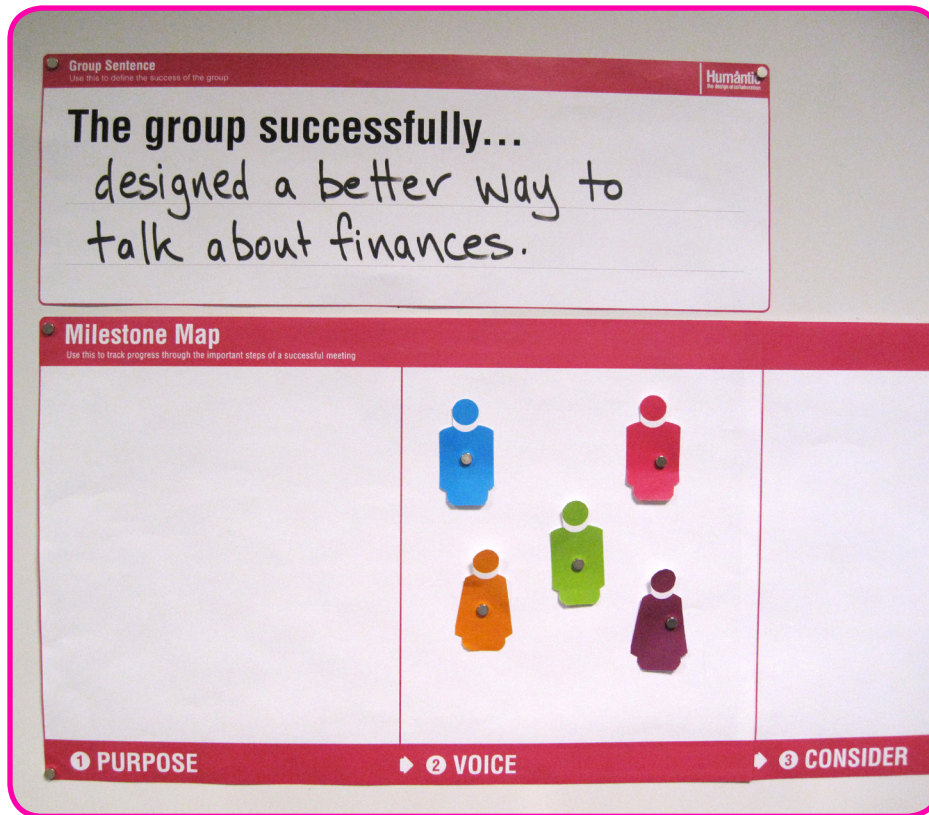


important stages of a successful group collaboration meeting, shown in [figure 5.7](#). Each member of the group will be given a character, that signifies themselves, and they have to move their character through the stages of a productive meeting. We suggest that the map is placed in an area where the group has to move to physically interact with it. By physically interacting with the map and following a set meeting structure, anxieties associated with collaboration will be diminished. This is because, similar to the process behind the collective purpose game, the act of play will also help individuals overcome anxiety associated with authority dependence<sup>6,6</sup>.

The prototype Ambition Tool kit is shown below.

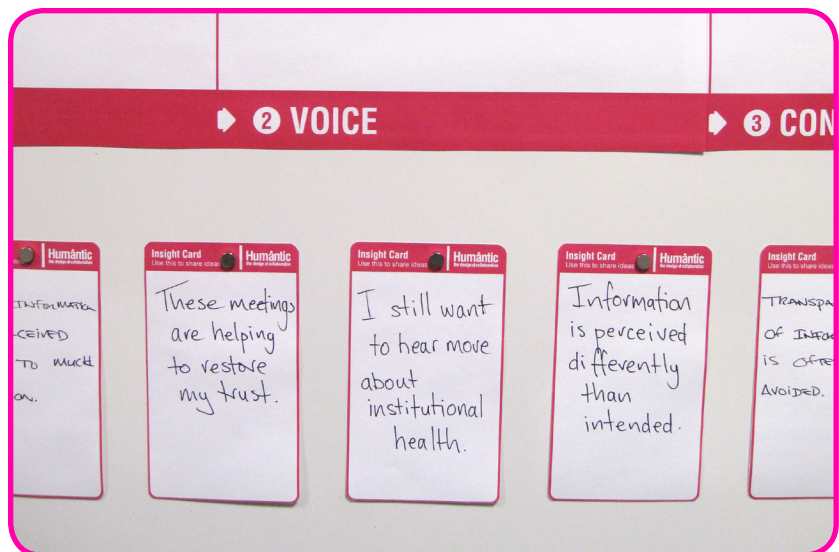
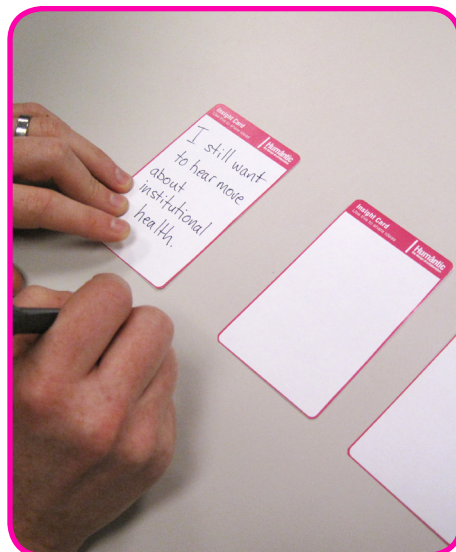
*The sentence tool acts as a motivator by defining the purpose of the group and communicating the goals they have to work towards.*





*The milestone map acts as a cognitive tool to help the group remember the important stages of a successful meeting.*

*The Insight cards act as Generators. They give the group a way to voice ideas and concerns. These can then be used to discuss and create.*

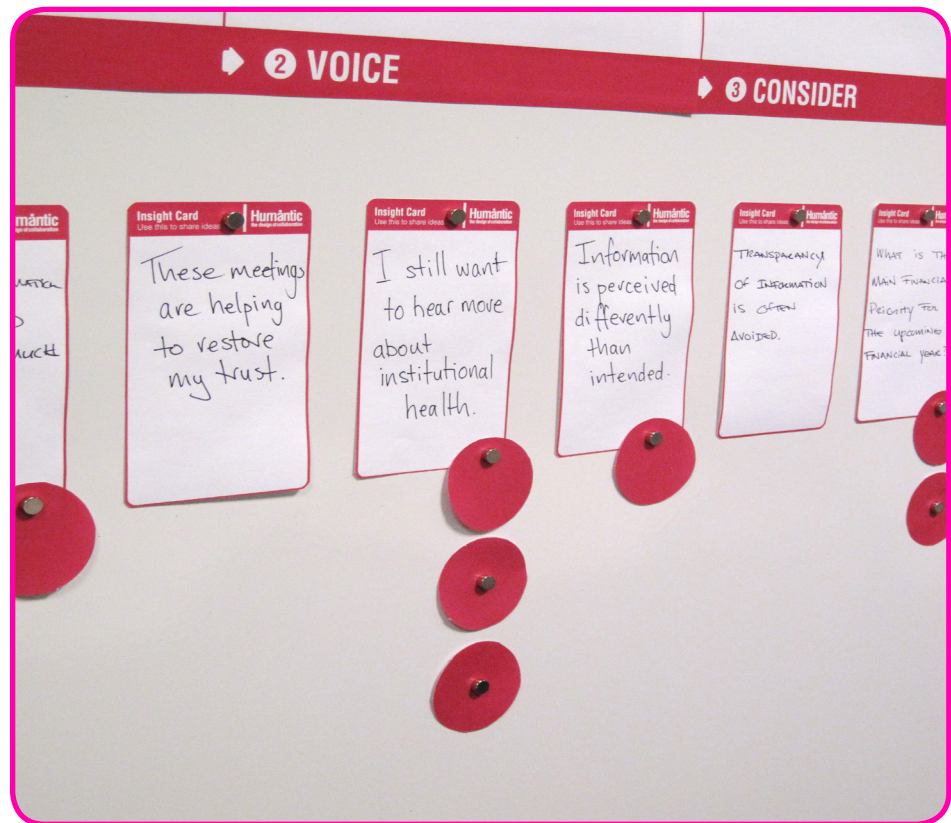


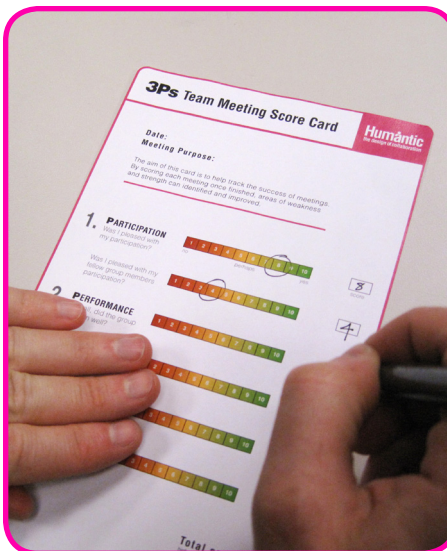
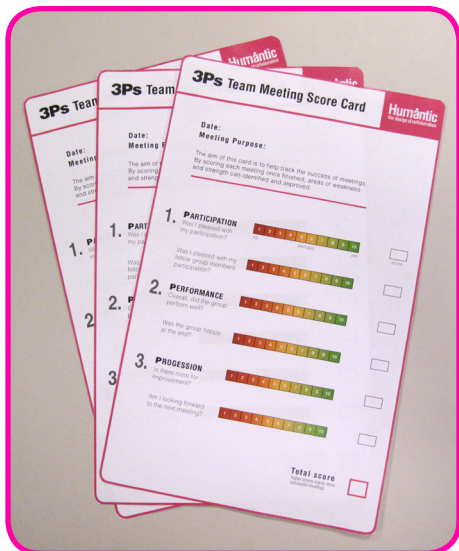




Placing every member's insight cards on the board allows all interests to be considered. Subsequent discussions are controlled by an authorizing artifact. This helps the group manage anxiety over authority.

After discussion, voting tools help the group select common interests and decide a collective "agreement" or common solution.









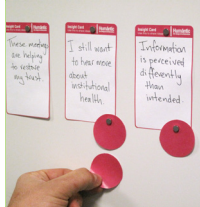
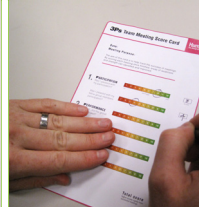
Scoring the meeting afterward allows members to reflect and find areas for future improvement and success.

The Humantic design Ambition Tool kit.





## Group stages

Purpose ①	Voice ②	Consider ③	Discuss ④	Decide ⑤	Reflect ⑥
					
Group members come together and create the sentence for their group.	Each member writes down their main issues, concerns or ideas.	Everyone shares so the whole group know what each other is thinking.	Members discuss each other's ideas, but can only speak when it's their turn.	The group rates the ideas. This allows common interests to be discovered.	How did we do? Members fill in the score card to see where they can improve.

## Psychology at play

group joining	disclosure	dependencies	authorizing	visual decision making	mastery
Before joining a group, individual members have to be clear on what the purpose of the group is.	Disclosing needs and concerns is important for determining if the group meets individual goals.	Communicating needs and concerns allows the group to be aware, offer support and input.	Groups function most effectively when the power flows between members. Everyone gets a turn.	If decisions are visible, making them should be easier. This allows the group to achieve goals.	By scoring each meeting, individuals can improve meetings and participation in the future.

## Tools to use

Tool 1: milestone map

Tool 2: the sentence

Tool 3: collective decisions kit

Tool 4: authorizing artifact

Tool 5: voting chips

Tool 6: score card

Figure 5.7: Ambition toolkit process.



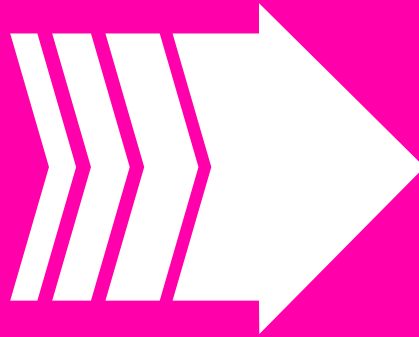
## 5.6 *Conclusions*

By using a design with an appreciation of group psychology, we helped form the foundations of a sustainable collaboration between the Finance Office and Faculty. Through the use of cognitive tools, the group was able to share concerns prior to forming the group. This led to the identification of a collective purpose that met the individual needs of all group members. This allowed us to improve our initial prototype of financial communication to a level that addressed more anxieties and questions of the project stakeholders. Hopefully, this is the first step in building more trust and dependencies between the group.

In order to maintain this effort, we also designed a prototype Ambition tool kit for the group. The ultimate aim is the kit will educate its users about productive team works as well as encourage the development of a sustainable collaboration. Hopefully, this kit will help maintain purpose and motivation without our presence.

# Future Directions

*Proposal and Conclusions*



# *Future Directions*

The next progression for this work is to package the research, field work and methods into a business deliverable. This deliverable should spell out how the knowledge and methods contained within this thesis can help businesses and organizations build more sustainable and effective collaborative teams. Below is an example of a potential project where Humantics could be applied.

## **6.1 Proposal for UArts academic transformation**

Presently, the University Of The Arts is preparing to undergo an major academic restructuring and transformation. We foresee many potential opportunities for Humantic methods to address the challenges that such a change will undoubtedly create.

## **6.2 Proposal Overview**

The University Of The Arts has drafted a proposal spelling out a vision for creating a new college of Art, Media and Design (CAMD). This proposal recommends that the University's disparate programs in design, art, visual communication, and film and video unite into a single academic unit.

This proposal was generated after approximately two years of research and investigation. The process began in the summer of 2008, with faculty being asked to envision a new University of The Arts from the ground up. During the spring of 2009, these visions were further refined by six task forces who focused ideas on broadly-defined creative fields: design, performance, art, film/video/interaction, education/business/management and context (see [figure 6.1](#)).

These six task forces each produced reports that were then subsequently combined, by an integrative task force, into a comprehensive academic transformation proposal (ITF report). This report spells out specific recommendations that should be considered in order to design a new innovative and creative academic curriculum for CAMD.

Currently, the responsibility of designing a new curriculum for each school will be given to academic task forces consisting of faculty from each discipline. It is hoped that each task force will come together and collaborate to create a new, innovative and intellectual curriculum that will help UArts set the standard as a modern art and design education institute.

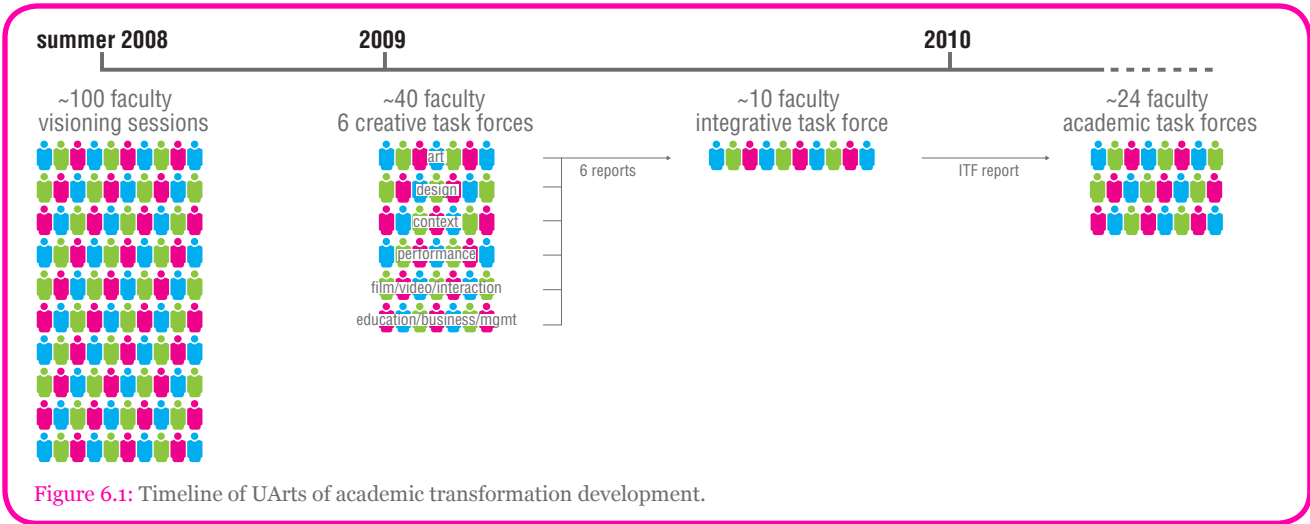


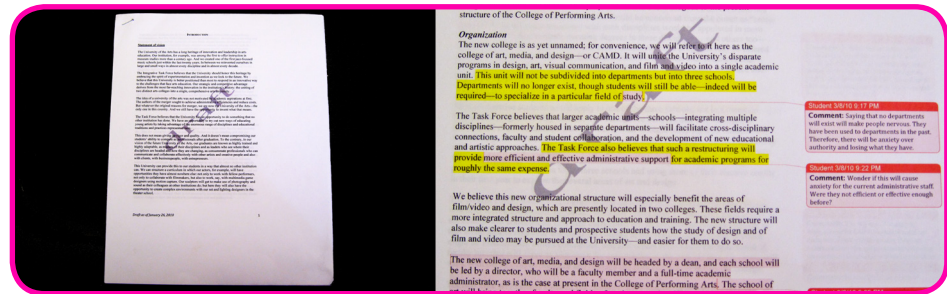
Figure 6.1: Timeline of UArts of academic transformation development.

### 6.3 Anticipated Challenges

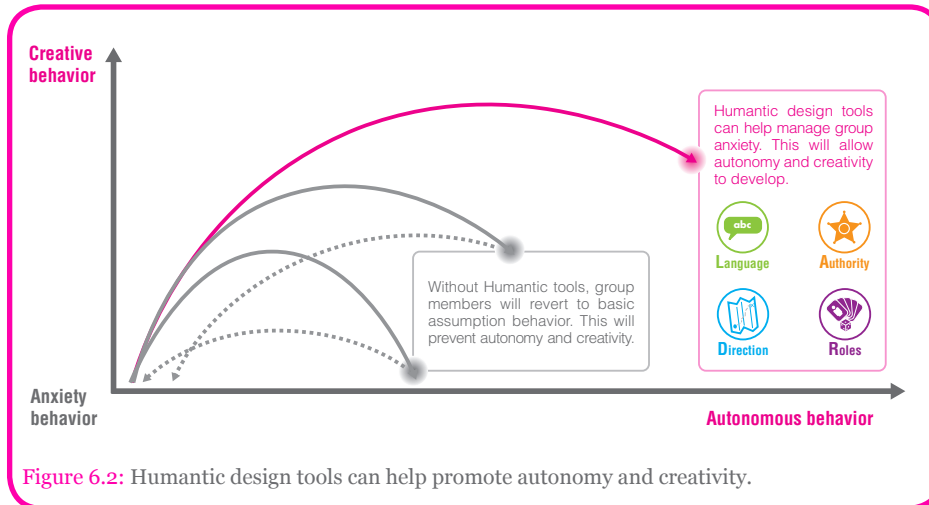
Each academic task force will have to create a new curriculum that supports the new CAMD structure and transdisciplinary education. This can only be achieved if the faculty can work as a group and collaborate together. However, based on research and findings within this thesis, we foresee that this process will be fraught with challenges.

From a systematic breakdown and analysis of the ITF report, it is clear that many recommendations, as well as lack of clarity will undoubtedly result in high levels of anxiety. Based on our previous experience, the majority of these anxieties have at their foundation confusion and uncertainty over Language, Authority, Direction and Roles (LADR).

*The ITF report was systematically analyzed for areas that could potentially cause confusion and anxiety.*



As a result, we hypothesize that the academic task forces will revert to basic assumption behavior. This will lead to infighting, sub-optimal performance, delivery of inadequate results and most detrimental, wasted time. Ultimately, as explained earlier, this anxiety will be detrimental to the autonomous behavior that favors the use of creative initiative and innovation (see figure 6.2).



*Humantic Design methods and tools can help task forces manage group anxieties. This will allow them to collaborate to create an innovative curriculum.*

We propose that Humanitics will be beneficial in helping address the cause of anxieties within these academic task forces. Based on our previous work, we have highlighted the reasoning and potential LADR opportunities for Humanitics to help the academic task forces collaborate more effectively.

### Language Anxiety

**Main Challenge:** Creating a language that allows everyone to communicate and address their anxieties regarding the ITF report.

The ITF report is 26 page document which, although well written, offers readers little structure and actionable knowledge. As a result, we would predict that the level of anxiety experienced by a majority of readers will be exacerbated due to lack of clarity and heightened confusion.

**Main Opportunity:** Systematically analyze the document to highlight and clarify specific challenge areas likely to cause anxiety.



Much like our previous work with the Finance Office and Faculty, creating a clear and understandable language is key to developing an informed conversation. Once the information is clarified, the task force members will be able to move from anxiety managing basic assumption behavior into productively talking about the plans outlined in the ITF report.

**Potential Scenario:**

We propose that the ITF report should be examined thoroughly to highlight areas of potential anxiety. From preliminary examination these areas would include:

*A major challenge awaiting the task force is understanding and acting on the information contained within the ITF report. Personal anxieties over the future will make this task even harder.*

1. The creation of new schools of Art, Media and Design. More graphical representations of this process would make understanding the relation of these new schools to old departments much clearer.
2. The significance of closing of old departments, such as Foundation. What does this mean for those currently employed as Foundation faculty?
3. New schools will require new leadership figures and positions of authority. Who will be given these authority positions.
4. As new courses are created, what does this mean for old courses and the faculty who taught them?

Areas such as these should be clearly explained with additional graphics when required. We would also propose since each of these topics has significant content, bulleted lists, end of paragraph summaries, and information hierarchy, should be included. The creation of a clearer language will help communicate the recommendations contained within the ITF report. This will ultimately help decrease the anxiety of task force members who are given the responsibility of designing the new curriculum (see [figure 6.3](#)).

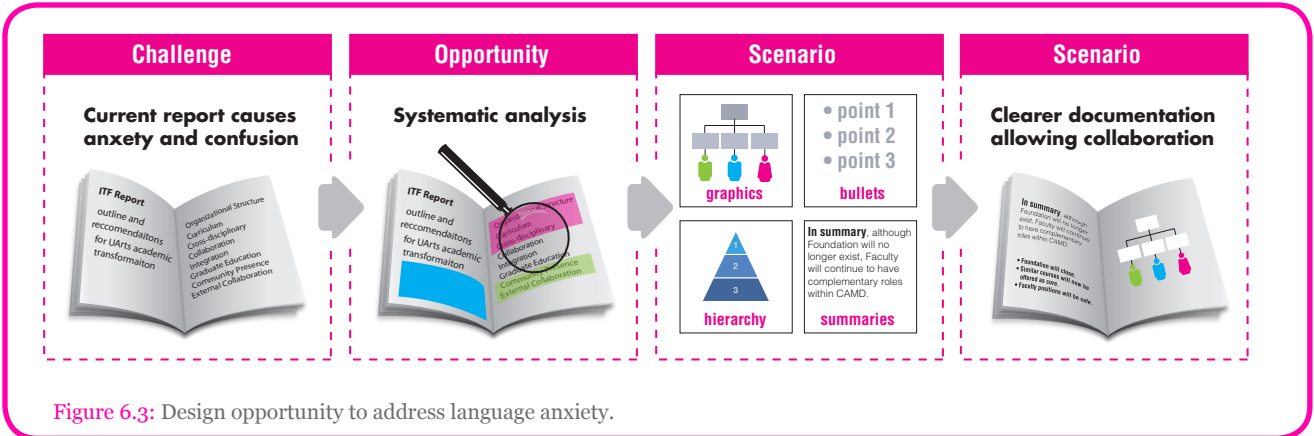


Figure 6.3: Design opportunity to address language anxiety.

## Authority Anxiety

**Main Challenge:** Effectively using authority and leadership in the academic task force group.

Trying to get faculty together to collaborate will not be an easy endeavour. The majority of the group will be experiencing anxiety over uncertainty about whether or not their interests, concerns and needs will be properly addressed by the group. As a result, we expect that individual's anxiety over leadership and authority will result in the group displaying basic assumption behavior<sup>6.1</sup>.

The likely result of this behavior will include authority dependence, authority counter dependence and rebellion. This will lead to fighting, small talk, avoidance of working and failure to innovate.

**Main Opportunity:** Authorizing and sharing power to empower the whole group.

From our field research, Alex Hillman had a very interesting observation of what makes authority an easy issue to deal with at Indy Hall. He said "Giving away power is really powerful."

Similarly, it has been proposed that the ideal situation for groups is the ability to let power flow and shift between individuals when it best serves the group's needs. It has also been observed that individuals can develop power as they empower others. As this happens the empowered individuals actually increase the overall power within the group<sup>6.2</sup>.

### Potential Scenario:

The likely scenario is that each task group will have a leader to direct the group's work. However, we would recommend that this leader should delegate tasks and work to those most qualified to do so. This is because conflict within groups starts to arise when power is treated as a resource that cannot be relinquished or distributed when it best suits the collective action of the group<sup>6.3</sup>.

In order to proceed in this fashion, we propose the design of tools that will promote autonomy and power sharing. This will encourage the feeling of having the power to direct one's life (see [figure 6.4](#)).



Authority

**Successful delegation will also depend on the roles and responsibilities given to each task force member.**

- 6.1 Bion, W. R. (1961). Experiences in groups, and other papers. London, Tavistock Publications.
- 6.2 Smith, K. K. and D. N. Berg (1987). Paradoxes of group life : understanding conflict, paralysis, and movement in group dynamics. San Francisco, Calif., Jossey-Bass., p.164
- 6.3 Ibid.

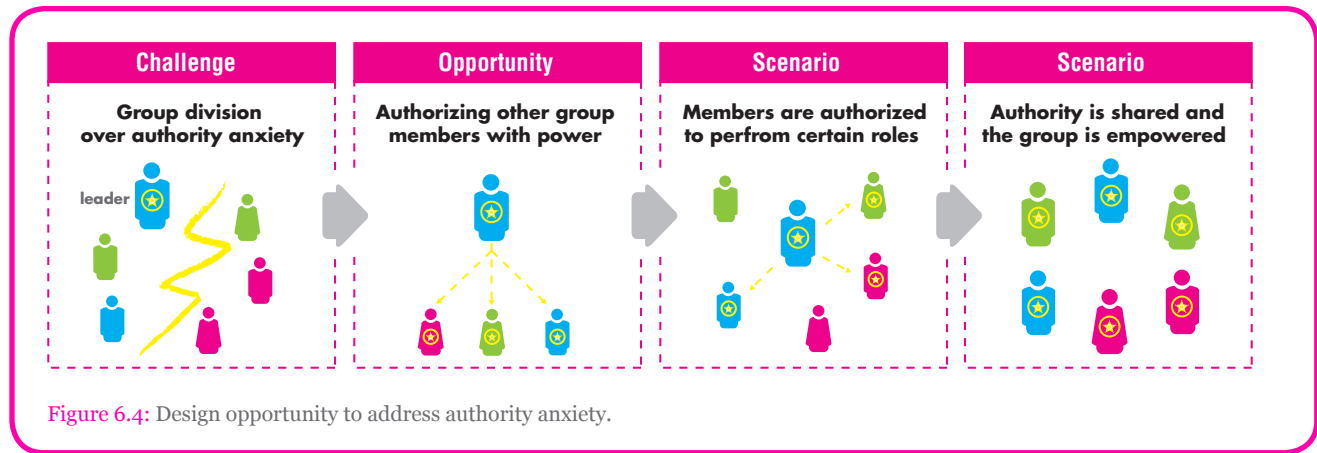


Figure 6.4: Design opportunity to address authority anxiety.

### Direction Anxiety



### Direction

**Main Challenge:** Determining the purpose and goals of the task force.

Before members are able to collaborate on designing a new curriculum, we hypothesize that there will be anxiety over the purpose, goals, deliverables, and perhaps even, the necessity of the task forces. This will cause the group to revert to anxiety managing behavior and will have to be addressed before the group can come to together to collaborate.

**Main Opportunity:** Disclosing individual concerns and needs within the groups in order to determine a collective purpose and direction.

When most members join groups they tend to be cautious, hold back participation, wishes and secrets, until they know what the group purpose is<sup>6.4</sup>. However, before a group purpose can be accurately defined, it has been suggested that members have to disclose their needs and concerns to one another. Once this has occurred, members can then determine if the purpose can the group meets their personal goals or create a collective goal that serves individual needs.

This situation was similar to our experience with the Finance Office and Faculty when we were designing a collective purpose.

**Potential Scenario:**

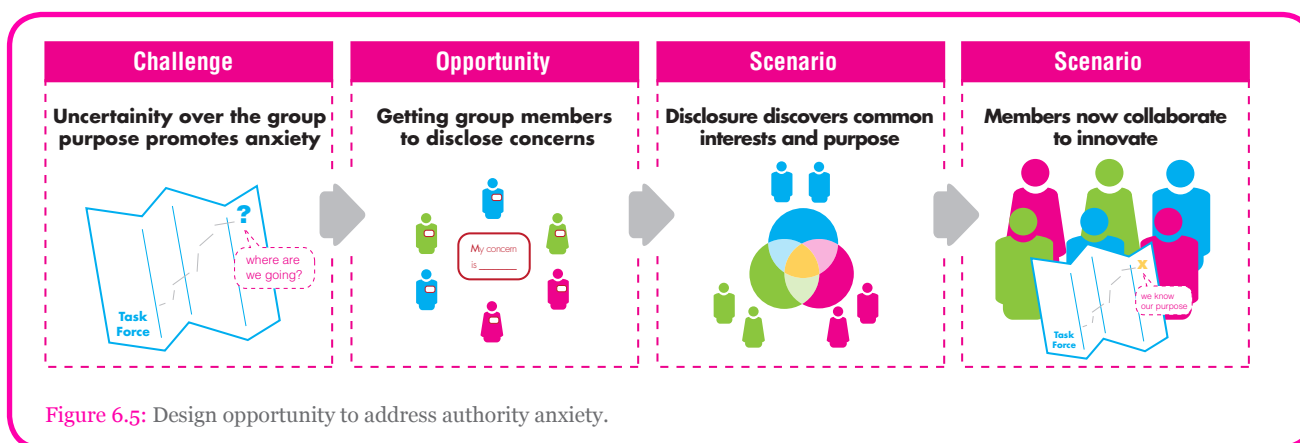
We propose that similar to the Finance Office and Faculty a series of interviews followed by a collective purpose workshop would be useful. This would

6.4 Ibid., p.109



1. Help task force members disclose their individual anxieties and concerns to each other member.
2. Allow common interests and collective purposes to be determined.

By voicing needs and clarifying a collective purpose of the group, the group will hopefully manage their prior anxieties regarding the purpose, goals and deliverables of the task force. Furthermore, we would also hypothesize that by recognizing that their individual goals will be considered and/or achieved by the larger collective purpose of the group, members will be more likely to practice autonomy. This, as explained earlier (see Introduction) is key to exercising creative initiative and will help members create exciting and innovative courses for the new curriculum (see figure 6.5).



## Roles Anxiety

**Main Challenge:** Managing group anxiety so that individual skills and knowledge can be aligned with suitable roles within the academic task forces.

Once the group has disclosed individual needs and started to identify common interests, we hypothesize their will still be anxiety over the future of their courses, their discipline and ultimately, their identity. Similar to anxiety from authority dependence, this will likely result in basic assumption behavior. Consequently, members will be unlikely to give each other the trust and freedom required to collaborate on designing a new curriculum.

**Main Opportunity:** Developing trust and dependency within the group.



Roles

Smith and Berg stated “A group works best when the members know each other’s strengths and weaknesses, and when the group’s tasks and ambitions are well matched to the limitations of its members.” Furthermore, “If those being depended upon are asked to be something they are not, or when they are perceived as untrustworthy, independence will follow as a method of dissent.”<sup>6.5</sup>

Consistent with this, at Indy Hall, members could trust and depend on the skills of one another. This allows them to frequently come together to successfully collaborate on creative projects. For example:

Dave “I got to see he [Johnny] worked his ass off, I got to see the quality. I was around other people at Indy Hall, but I never saw that work.”

Johnny “We could depend on each other, I could depend on him to do his job and he could depend on me to do mine.”

Alex “At Indy Hall you’re developing a community of trust.” “In a corporate environment you almost inherently don’t trust your coworkers because you’re vying after the same position. But here, you’re not vying after the same stuff. It’s competition with, rather than against.”

#### Potential Scenario:

We believe there are two types of roles that each member should be depended on as they collaborate on creating a new curriculum. These are:

1. Academic expert roles
2. Group support roles

Academic expert roles will involve being an advocate for one’s own expertise and professional. In order to play this role, members will be asked to “dream” or “create” their ideal curriculum based on their own discipline. This is a role that every one else in the group can trust each other to perform.

Group support roles are responsibilities that aid in the productivity and success of collaboration. These roles share much in common with those designed for the Role Playing cards (see Introduction).

We hypothesize that although each group member can be depended on to fully support their own discipline, they may not be as eager to support other’s ideas and/or suggestions. This may result in behavior that is counter-productive to collaboration. For example, two individuals from different disciplines may feel like the other “constantly drags their heels with my ideas” or feel like others “always go off on tangents and pull the group off task”.

**Role Card roles included: Devil’s advocate, White elephant, Navigator, Simplifier and Documenter. These roles based on characters that help promote successful meeting structures.**

6.5 Ibid.

Potential Group support roles could include:

1. The Navigator: This role maintains the direction and purpose of the group.
2. The Devil's advocate: We believe a tool promoting rotation of the Devil's advocate role can help test the quality and identify weaknesses of ideas while helping to manage this natural behavior.
3. Others such as, the Initiator and Elaborator, which are described in further detail in the book, *Zen of Groups*<sup>6.6</sup>.

The Group support roles will help ensure that everybody's Academic expert role is used responsibly (see figure 6.6).

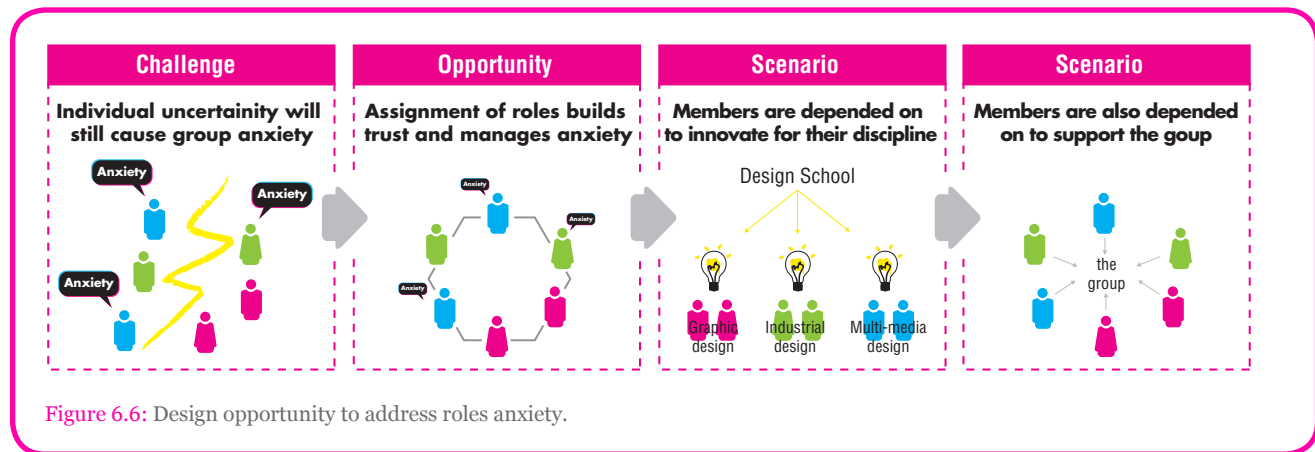


Figure 6.6: Design opportunity to address roles anxiety.

## 6.4 Summary of Future Directions

Individual confusion surrounding Language, Authority, Roles and Direction are primarily responsible for basic assumption reversion and collaboration weakness. By addressing the anxieties described above, we believe that Humanitics and tools will help those assigned to task forces collaborate quicker and more effectively together. This will increase the potential for task force members to develop autonomy and creative initiative, which are essential for innovation and creativity. Our hope is that by doing this, we can help encourage the behaviors, trusts and dependencies that will be required to develop the new academic courses and curriculum.

*For more information creative initiative see the Indy Hall section.*

- 6.6 Hunter, D., A. Bailey, et al. (1995). *The Zen of groups : a handbook for people meeting with a purpose*. Tucson, AZ, Fisher Books.



## *Final Conclusions*

In this thesis we demonstrated the importance of design methods that consider in detail the underlying psychology that occurs during collaboration. We term these, **Humanitics**.

Our research highlighted that the major psychological cause of collaboration weakness is a reversion into what Bion termed “basic assumption behavior”. Crucially however, we demonstrated that cognitive tools that addressed the cause of basic assumption behavior; confusion surrounding Language, Authority, Direction and Roles, (LADR), provide an innovative method to help groups address and overcome their collaborative weaknesses. These tools not only offer solutions to help group members overcome their anxieties associated with group work, but also encourage the development of autonomy, trust and creativity. This is critical to the success of Humanitic tools, as our research at Indy Hall demonstrated, these behaviors are essential for promoting the development of relationships required for creative collaboration.

Through development and field testing we also demonstrated the potential for using cognitive tools to help address the anxieties surrounding group direction and purpose. We termed these tools “Collective purpose tools”. They were successfully tested at Vizthink Philadelphia and further refined with the Finance Office and Faculty project at UArts.

For the Finance and Faculty project, this was a tool that helped kick start a collaborative effort between the two groups. However, this is really only the start of their relationship together. In order for them to develop the type of relationship, trust and creativity observed at Indy Hall, we proposed and prototyped a preliminary version of an Ambition Tool Kit, aimed at sustaining this collaboration in the future. Our aim is to deliver this tool kit to the group and demonstrate how it can be used when they are working together. The success of this tool kit is important to the long-term sustainability of the group.

Finally, the success of Humanitics demonstrates a potential application for most collaborative settings. Therefore, as described previously, a major future direction for this thesis is to package our research and ideas into a proposal for helping UArts during an up coming period of academic transformation. We believe that Humanitics will help those involved in this transformation work together in a more effective and productive manner.

In conclusion, Humanitics is an innovative method of using design processes to help manage the psychology and dynamics that occur during team work. The result of this is more effective, creative and sustainable collaboration.



# Glossary

*We realize that some of our terminology are not exactly common place, so we have included a few definitions to clear things up.*

**Ambition Tools:** Cognitive tools designed to address and help groups generate motivation and maintain sustainable collaboration.

**Anxiety Tools:** Cognitive tools designed to address and help groups manage anxiety and basic assumption behavior during collaboration.

**Archetypes:** Original patterns or models of which all things of the same type are representations or copies.

**Articulation Tools:** Tools such as interviewing and information visualization for the purposes of data gathering and data presentation.

**Autonomy:** 1. The ability to direct one's life. 2. Freedom of action.

**Authority Confusion:** Confusion surrounding group authority, power and leadership that leads to individual member anxiety and collaborative weakness.

**Basic assumption behavior:** Innate human behaviors that are used by individuals to manage the anxieties associated with group life.

**Cognitive:** Of, relating to, being, or involving conscious intellectual activity (as thinking, reasoning, or remembering)

**Cognitive artifact:** Artificial devices that maintain, display, or operate upon information in order to serve a representational function that increases human cognitive performance.

**Collaboration:** To work jointly with others on an activity or project.

**Collective Purpose:** A group purpose that permits individual members to satisfy personal needs by achieving larger group goals.

**Creative initiative:** The innate drive to be creative.

**Dependency:** The action of being reliant on someone or something else.

**Direction Confusion:** Confusion surrounding group direction, purpose and goals that leads to individual member anxiety and collaborative weakness.

**Generator Tools:** Tools that act as prompts to begin the process starting a work task when individuals come together to work as a group.

**Human Factors:** A practice of design incorporating knowledge from psychology, engineering, industrial design, statistics, operations research and anthropometry.

**Industrial Design:** A combination of applied art and applied science, whereby the aesthetics and usability of mass-produced products may be improved for marketability and production.

**Industrial Psychology:** Psychology that applies to employee relationships, performance and motivations in industry and organizations.

**Inter-dependent:** Reliant on a person within a group.

**Intervention:** Structured activities that act to change the status quo in behavior of target groups, clients or stakeholders.

**Language Confusion:** Confusion surrounding common language (terminology) that leads to individual member anxiety and collaborative weakness.

**Motivation:** The drive and desire to achieve goals.

**Motivator Tools:** Tools that create an experience that helps individual members to set long lasting goal/goals for the group.

**Prototype:** A first full-scale and usually functional form of a new type or design

**Reflector Tools:** Tools used to determine the success of group collaborative effort.

**Roles Confusion:** anxieties relating to individual roles and responsibilities that leads to individual member anxiety and collaborative weakness.

**ROWE:** Results-Only Work Environment is a management strategy where employees are evaluated on performance, not presence.

**Stakeholder:** One who is involved in or affected by the actions of design.

**Transformation Design:** A human-centered, interdisciplinary process that seeks to create desirable and sustainable changes in behavior and form – of individuals, systems and organizations – often for socially progressive ends.



## ***About the Authors***



### ***Fraser A. Marshall Ph.D.***

For ten years, Fraser worked as a research scientist in the field of Human Immunology. Currently, he applies the rigors and organization of science to the tangible world of design. He likes to design systems that encourage collaboration, visualization, communication and happiness.



### ***Justin M. Witman***

Drawing from a decade of experience as Art Director and designer, Mr. Witman has delivered successful creative campaigns in a wide range of industries. Presently, he leverages his knowledge of design to help groups manage complex challenges of collaboration.

# Humantics

the design of collaboration



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