
AC 2011-1165: USING SPIRAL DYNAMICS TO PREPARE ENGINEERS FOR THE GLOBAL WORKFORCE

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Using Spiral Dynamics to Prepare Engineers for the Global Workforce

One of the major challenges facing the global marketplace is the integration of work forces in transnational, as well as regional companies that are dependent on groups of both product suppliers as well as technical talent from diverse ethnic, racial and social backgrounds. Since the Civil Rights movement and its success in America in the '60s and '70s, the dominant perspective on how to achieve this integration were techniques built on the assumption of differences related to culture.

Indeed, the cultural paradigm of defining differences between individuals from different parts of the world is considered unassailable. Entire departments are now dedicated to the research of the difference between cultures, and universities are also completely structured around this paradigm. To even question this basis for decisionmaking is considered a heresy.

However, the basis of culture, and cultural differences is inherently external. Cultures are defined as historic patterns followed by groups of people that share languages, holidays, legalistic patterns of social behavior, such as marriage and externally defined family relations, and food. What is less obvious is that cultures also exist in the context of prevailing social organization and relational habits, and these relational modes are often common across cultures, and are often generated in an emergent fashion by individuals. Indeed, these are often transcultural, and many cultures may share similar relational modes.

Further, recognized cultures are also defined by their temporal persistence – in other words, they are typically habits that have been shared by a group of people over decades, centuries, or even millennia. For example, Christmas as a holiday has been in existence for approximately 1700 years, though the structure of the festival has changed significantly even in the last 100 years.

Because of this 'culture-centered' viewpoint, little thought has been given to the dominant social relational modes that have typically made up the structure of humans inside a culture. When one reflects back on most of civilization, the dominant support structure for cultures has been hierarchies. Hierarchies can be dichotomized into two types: authoritarian hierarchies, run by an individual or group of individuals, with examples running the historical gamut from Egyptian pharaohs to Nazi Germany; and legalistic/absolutistic hierarchies, such as the United States. The degree of hierarchicalization may be initially hard to categorize. However, one can make an attempt by considering how important an independent personality is to the direction of the society, or a given body of law is for governing the majority of transactions engaged in the society.

Another indicator is the value of independent relationships, as well as the mechanisms for cultivation present in a society or an organization. An organization that frowns on people independently traversing an organization to find resources for success would be

considered more rigidly hierarchical. An organization that would reward its members for stepping outside the organizational chart to achieve success would have a very different profile and relational structure from the previous one.

Spiral Dynamics

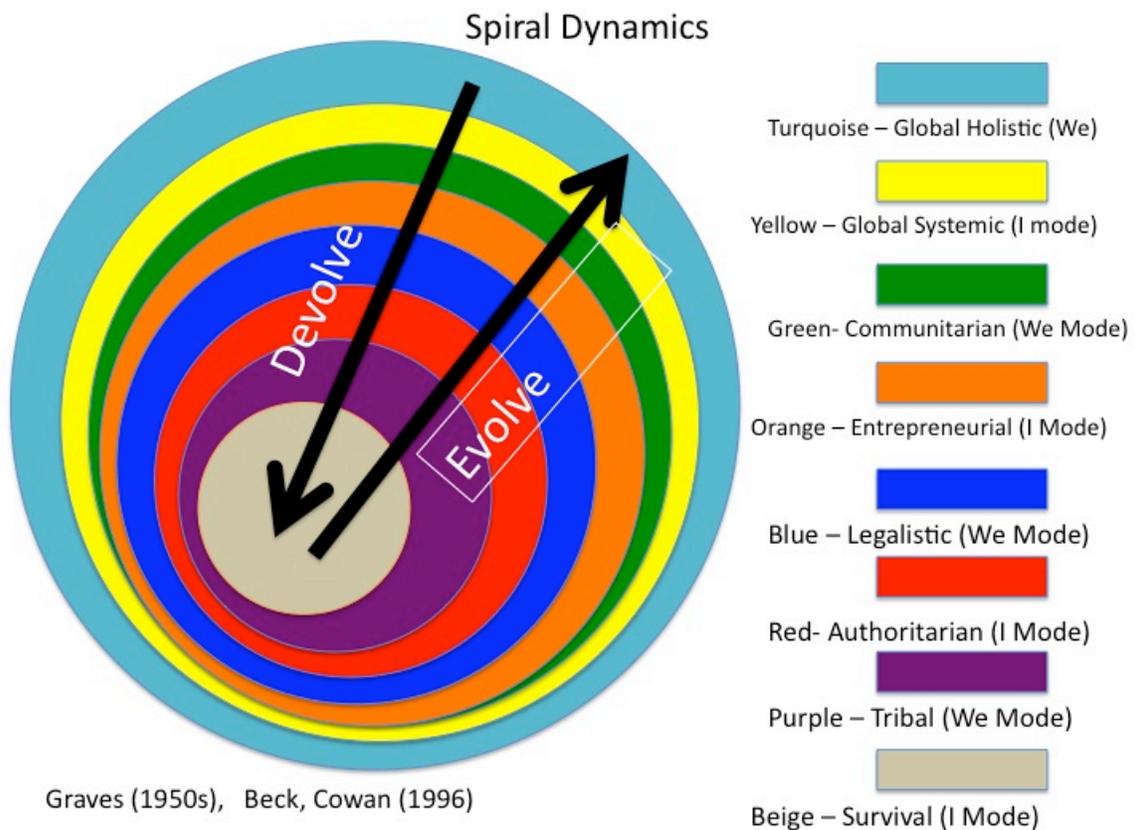
In the '50s, a different approach toward understanding relational dynamics was pioneered by Clare Graves, a professor at Union College, and further advanced by Don Beck and Chris Cowan, students of Graves and authors of [1]. Graves, originally performing research to validate Maslow's Hierarchy of Needs in a relational context, found that Maslow's Hierarchy was incomplete. He found that societies and individuals traversed well-defined relational modes dependent on the challenges faced by those societies at their particular moments of crisis. Further, these modes were split into two dominant forms – "I" modes, where some aspect of an individual was expressed, to "We" modes, where individuals sacrifice their well-being to the larger good of the group. These levels were color-coded for ease of discussion, though the colors do not have any independent meaning.

In increasing complexity, the different relational modes, what Beck [2] has coined the "psycho-social DNA" of a society, are, from lower on the Spiral, to highest:

1. Survival (I - Beige) – characterized by individual survival needs (water, food, shelter)
2. Tribal/Magical (We - Purple) – characterized by group-shared rituals and belief structures, but no strong leadership structure.
3. Authoritarian (I - Red) – Groups of people organized roughly into a hierarchy, with an individual or groups of individuals occupying stratified positions of power and privilege in the group, as well as independent decision-making authority.
4. Legalistic/Absolutistic (We - Blue) – Groups of people organized into hierarchy that, like the authoritarian structure, occupy stratified positions of power and privilege, but are subject to a body of law that applies to all, and restrains individual power and decision-making capability.
5. Achievement-oriented/Entrepreneurial (I - Orange) – Societies that follow this relational mode, or have some of this feature embodied in their structure are the first to value highly independently formed relationships. Instead of a rigid hierarchy of people or laws, group structure is dependent on achieving a goal or some level of culturally desirable performance.
6. Communitarian (We - Green) – People-oriented societies that highly value each individual in the society, and are based around egalitarian principles and laws that enshrine the individuals' rights in the context of the group.
7. Global Systemic (I - Yellow) – Recognizes the relational dynamics present in all lower levels and opportunistically combines these to achieve higher goals and purposes

8. Global Turquoise (We – Turquoise) Combination of various Yellow ‘I’ mode thinkers devising larger systems that span larger expanses of cultural relational dynamics and incorporating these together to achieve goals on a global level

Figure 1 is one potential representation of Spiral Dynamics theory. It is important to remember that though individuals and societies can and do traverse up and down the Spiral as situational needs dictate, a given individual or society can only use relational modes at or below the maximum developmental stage. Thus, a society that has developed into a communitarian model can still use authoritarian structures (there are still prisons in Sweden), but societies that have only developed to the authoritarian level cannot have intrinsic communitarian organizations that can stand independently. A king may have a relief society for poor people, but poor people will still stand in diminished status in that society, and their privileges are still dependent on the largess of the king.



Spiral Dynamics as a field is relatively poorly developed. There is a sparse rigorously peer-reviewed literature documenting its ramifications, and because of many people seeking alternate spiritual perspectives, it is often co-opted by many either as a tool to hierarchicalize ostensible human enlightenment, or serve as a springboard for alternate out-of-the-mainstream religious practice.

This is unfortunate, because the insights of Spiral Dynamics as applied to preparing engineers for international practice come from lower on the Spiral. In fact, one can use

the Spiral and understanding the various colors and combinations of relational modes to interpret corporate culture and build bridges among organizations with different relational modes.

A couple of interesting artifacts on the Spiral have emerged from the author's thought work on it. One of the most interesting is what the author calls the "Trust Boundary" – a line separating the hierarchically dominated Blue and lower modes, and the Orange and higher modes. The Trust Boundary delineates the breakpoint between modes where externally formed definitions of relationships are the most dominant, to the modes where independent relationship formation in pursuit of goals, learning and experience dominate.

For example, in a Red/Blue – dominated hierarchy, similar to a contemporary university, the most valuable relationships an individual has are the ones that are defined by the institution. Being a full professor holds more status, and is "better" than being an associate professor; likewise, from an ethical perspective, many times titles even dictate who can talk to whom. In such a hierarchy, a professor must always first talk to his department Chair before broaching a controversial subject with the Dean. Though independent relationships have some value within the university, for the most part, students are on the bottom, and faculty and administrators are on the top.

Contrast to an entrepreneurial company. There, independent relationship formation, if it results in company success, does not hold a discriminatory edge because of an individual's title. If collaboration manages to save the company money, it does not matter if it is between the vice-president and the janitor. All monetary savings are good.

Further, from my own observation, different types of organizational structures and relational modes tend to bring on dramatic differences in performance and ownership. Red/Blue societies, where either the Boss is in charge, or the Rules are in charge, lead to a loss of ownership and responsibility in the individuals over time, as well as the loss of the ability of individuals in that society to form successful independent relationships. Comparing similar relational patterns with other authors, it is also clear that others have written extensively about this area of transition, such as Covey, in Seven Habits of Highly Effective People, though obviously not using Spiral Dynamics verbiage.

Figure 2 shows an example of the Spiral Dynamics modes of a typical university. As I have observed, universities are low-performance environments where status matters more than actual performance metrics. Papers that are never read again and grants from specific government agencies are held arbitrarily in higher esteem than work from industrial sponsors, or successful webs of relationships with companies that might hire students. There are many examples of this that are beyond the scope of this paper.

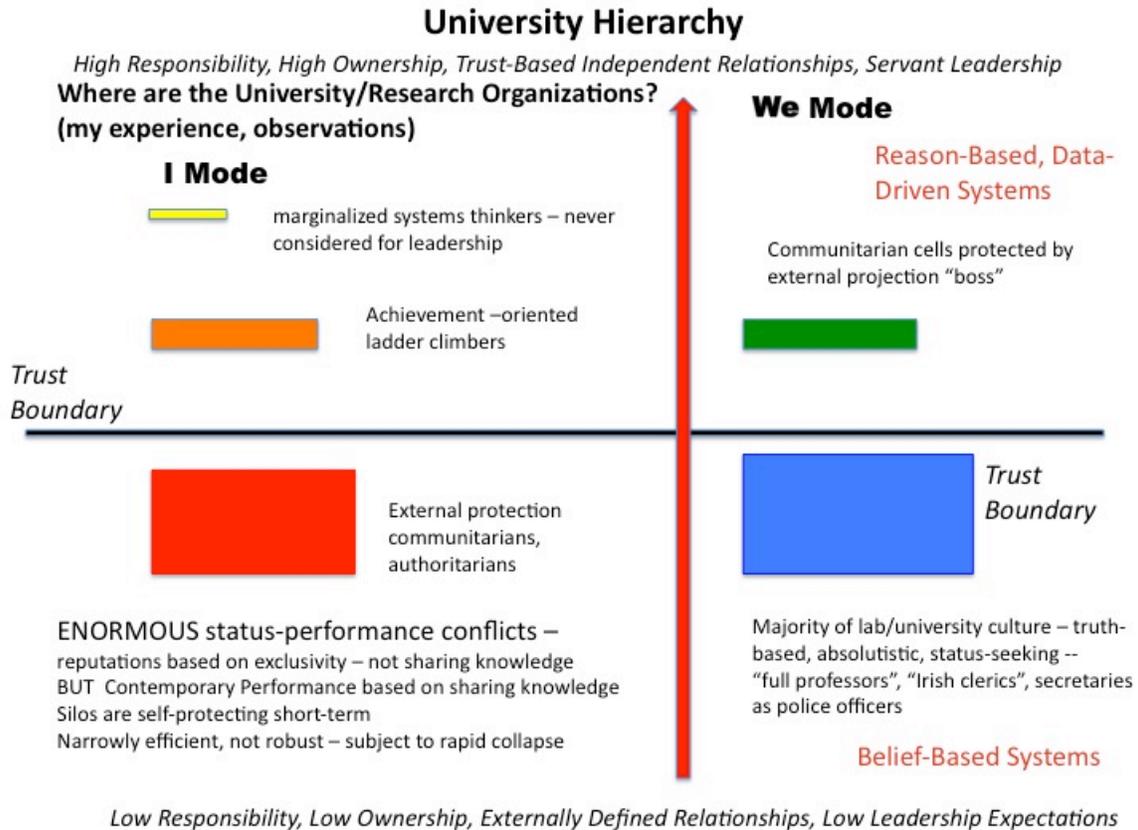


Figure 2

Someone wanting to fit into a university hierarchy, regardless of cultural background, must follow the fundamental relational rules of the institution. Additionally, from my own personal experience, there are few differences except in degree in the majority of universities across the world. Universities in China operate in much the same way as universities in the United States.

Compare this to a high performance organization such as Boeing Services, which has world-wide responsibilities for making sure Boeing aircraft are maintained and kept flying in the air. See Figure 3. There, the most important performance characteristic is delay time on the ground – something measured in minutes, and having a direct human cost if those minutes are not minimized. There, for every airport in every country, a different part supplier or maintenance provider solution may be required. There is no hierarchical chart to draw, and the status of an individual will not get the airplane off the ground – only a directly addressed maintenance need.

High Functioning Service Organizations

High Responsibility, High Ownership, Trust-Based Independent Relationships, Servant Leadership

Where is Boeing Global Service Organization?
(my experience, observations)

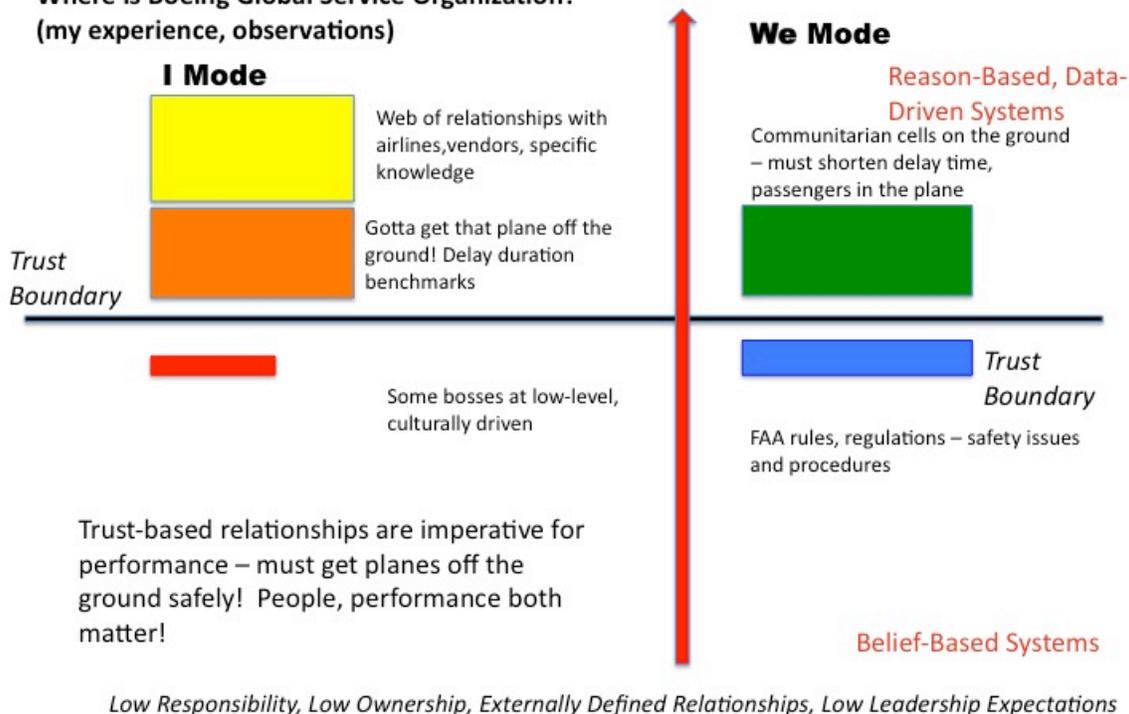


Figure 3

Contrasting Cultural and Spiral Relational Systems

The two examples given above from a Spiral Dynamic perspective beg interesting questions regarding how best to prepare students for a true global systemic environment. If one wanted to work in a Chinese company, for example, conventional wisdom and a multicultural perspective might say one would do best by learning about Chinese history, The Long March, the Cultural Revolution, the Tiannamen event and other important events in recent Chinese history, as well as some introduction to Chinese manners and social graces.

However, much has changed in China in the last 21 years. Popular culture is now endemic, and world middle-class culture has also permeated the street society of most major Chinese cities. Chinese people eat Kentucky Fried Chicken, and drink Starbucks coffee. Knowing about Mao might help some people understand some of the Chinese workplace. But the reality is that it might be more useful to understand QQ, the extremely popular Chinese equivalent of Skype, as a conversation starter to ease workplace transition. Even from my personal experience visiting universities in China, while universities possess even more rigid hierarchies than their American cousins, flexible new structures were emergent among younger faculty.

Teaching Spiral Dynamics as a tool for Engineering Cultural Transitions

Spiral Dynamics as a tool can be taught to senior engineers. The strength of teaching such an approach is that it gives a systemic method for understanding cultural traversal. The problem with teaching it is inherent to teaching all such systemic approaches to problem solution – if you think like a systems dynamicist, then systems approach makes sense to you. If you don't then, by virtue of their fundamental interconnectivity, they can be challenging for people with knowledge-fragmented worldviews to comprehend.

My personal experience lays out a pedagogy that uses the following steps:

1. Introduction of the theory and explanation of the colors.
2. Mapping various colors/levels to individual experiences.
3. Insights into guideposts and detectors for the various colors/level.
4. Modes for approaching communication for people once independent analysis of Spiral Modes is completed.

Item 3 is very interesting. There is immediate evidence that a student can gather on a job interview that can enable them to have a beginning understanding into a given corporate culture. Basic things like organization charts are readily available, as well as penalties for talking across hierarchical silos. An organization that is a rigid hierarchy will also likely possess an organizational chart, because that chart alone will be important for the individuals in the organization to show their status relative to other individuals. An organization without an organizational chart is probably more of a performance-based organization than one with one. An organization that only organizes on a project-level basis might even be more relationally sophisticated than any as it lets the needs of a given project dictate structure.

Identification of community resources inside a company also allow an individual to detect 'We' behavior as well as suitability for employment. Purchasing authority is another way of detecting performance and trust level.

Regarding teaching Item 4, a couple of graphs are instructive to understand how communications break down between Spiral levels. Figure 4 maps incomprehension between different groups with different dominant Spiral perspectives.

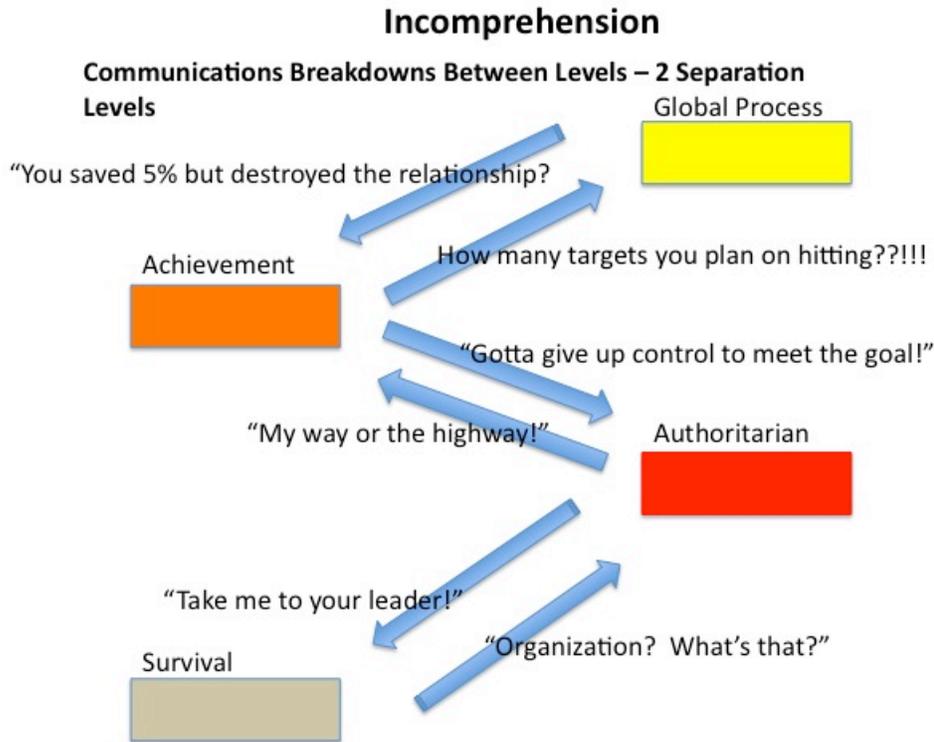


Figure 4

A general rule of thumb the author has observed is that communication breaks down between levels if there is more than one level difference between two communicating parties. Figure 4 shows how conflict manifests ups the Spiral. It goes without saying that someone at a Survival level is going to have a difficult time with someone focused on Achievement. Lower level conflicts are more instructive. An authoritarian would have a huge problem with a survival-based ban, because the authoritarian would not understand how any organization could not possess a leader. Someone who is achievement-oriented is going to have conflicts with an authoritarian organization if there are elements of reorganization necessary for performance. The authoritarian organization, which is status-based, is not going to understand why it must reorganize to meet performance goals, unless it is directed to by a higher authority.

Similarly, as time scale expands with the higher levels, a person who is Second-Tier Yellow is going to have a challenging time explaining to someone at Achievement-Orange why they must forego meeting quarterly targets for the greater good of the enterprise.

An interesting phenomenon starts to develop once primary relational levels are more than two steps apart (1 gap + 'I/We' transition). I call this the 'Insanity/Barbarism' transition in relational dynamics. See Figure 5.

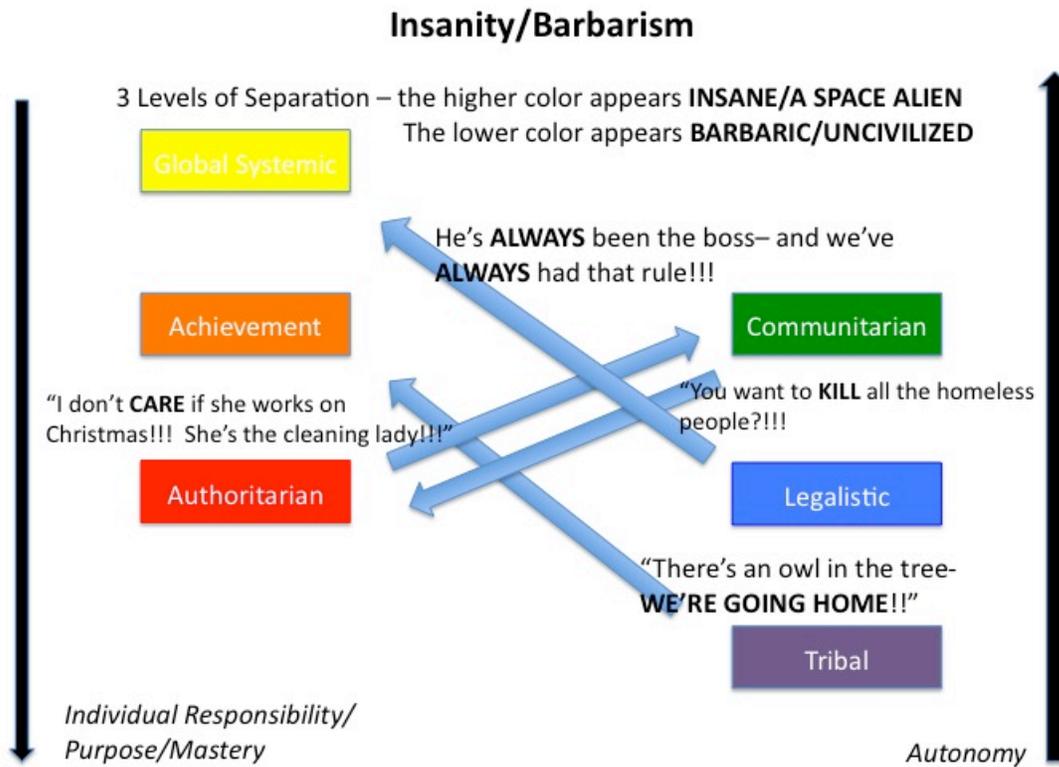


Figure 5

One of my favorite examples to use is asking students how they might deal with the issue of homeless people in the U.S. Such a topic is interesting because it is politically charged, and reflects how students view both individual roles (‘I’ modes) and governmental/church roles (‘We’ modes). An authoritarian perspective would emphasize either neglecting profoundly the homeless, as they are at the bottom of any ostensible societal hierarchy – it is important to remember in the U.S., originally, one had to be a member of the landed gentry to even vote! A communitarian perspective would necessarily include managing the homeless for their various rehabilitative needs. One can detect ‘Yellow’ level insights if a more cafeteria-type approach toward dealing with the issue is presented. Some homeless people may indeed just need to be institutionalized, but others might be rehabilitated to perform societal functions as well. Walking students through case studies such as these develop the abilities of students to traverse similar though processes in evaluating work environments.

Conclusion

Spiral Dynamics as a social relational model offers many unique, trans-cultural insights into engineering workplace cultures, and needs to be explored as a way of preparing the next generation of global engineers. It also provides a springboard for mindfulness and rational development of empathy, perhaps the most important emotional technique for the individual traversing the complex global workplace.

1. Beck, Don, and Cowan, Chris Spiral Dynamics, Blackwell Publishers, Cambridge, MA, 1996
2. Beck, Don, <http://www.spiraldynamics.net>