

UNDERSTANDING PSYCHOLOGICAL TYPE TO IMPROVE PROJECT TEAM PERFORMANCE

Gordon Culp and Anne Smith
Smith Culp Consulting
SmithCulp.com

INTRODUCTION

Do any of these project situations seem familiar?

- Work has to be redone because it did not meet the client's expectations.
- Some team members resist working with others who they stereotype as rigid, flaky, wishy-washy, or controlling.
- Some team members go off on tangents (scope creep) because ideas and directions are not thoroughly discussed.

These and other project problems are often blamed on "poor communications," an overly broad label for a range of personality differences that can create tensions and misunderstandings between project personnel. This paper discusses some of the psychological factors and individual preferences underlying these differences, describes how a project team can use an understanding of these preferences to improve project performance, and presents data on the predominant psychological types exhibited by project personnel employed by consulting engineering firms.

TYPE THEORY

Individuals with different personalities approach a project in very different ways. A person's personality is comprised of many psychological facets that are interrelated in a complex and unique way. Although it is not possible to capture all of these facets in any one analytical tool, this paper describes a tool that identifies different individual preferences for taking in information, organizing that information, reaching conclusions, and dealing with the outer world. These are all characteristics that are particularly relevant to project team and individual performance.

The noted psychiatrist C.J. Jung suggested many years ago that certain aspects of human behavior are predictable and classifiable. From his observations of clients and others, Jung found predictable and differing patterns of normal behavior. He developed a theory that there are predictable differences in the way people prefer to take in information, organize the information, and reach conclusions. When people differ in what they perceive and in how they reach conclusions, they will differ in their interests, reactions, values, motivations and skills. These differences, when not understood and accepted, have caused major problems on many a project.

The practical application of Jung's work has been greatly enhanced by the work of Isabel Myers and Katharine Briggs. Inspired by Jung's work, they began in the 1930s to observe and develop

ways to measure the differences cited by Jung. They designed a psychological instrument that explains, in scientifically rigorous and reliable terms, individual preferences according to Jung's theory. Their work resulted in the Myers-Briggs Type Indicator (MBTI) instrument (MBTI and the Myers-Briggs Type Indicator are registered trademarks of Consulting Psychologists Press), a questionnaire consisting of multiple-choice questions that can be completed in 15 to 20 minutes. The MBTI should be administered and interpreted by a qualified professional to avoid misapplication or misuse. The MBTI is one of the most widely used psychological instruments, with more than two million people completing it each year. It has been translated into many foreign languages for use around the world. Although the information gained from the MBTI goes far beyond what can be covered in this brief paper, our goal is to show how even the basic information we present can be used to improve individual and team performance.

VALUE OF UNDERSTANDING INDIVIDUAL PREFERENCES

Although human personality is far too complex to be described solely by the preferences that are identified by the MBTI, understanding these preferences can provide several benefits to a project team. It can:

- Provide a description of how individuals prefer to take in information and to prioritize that information to make judgments; preferences that are critical in achieving project success.
- Identify potential blind spots or areas of vulnerability on a project team.
- Inform the team about how best to present information to and communicate with the client and team members.
- Promote understanding of normal differences between people on project-related areas such as communication, time management, work environment, best supervision style, preferred learning style, and many others.
- Provide information useful in coaching team members.
- Demonstrate the value of having diverse styles on the team.
- Enhance problem solving and decision making.
- Improve effectiveness in dealing with conflict that arises during the course of the project.
- Reduce stress levels by helping the team understand which situations will energize an individual and which will stress that individual.
- Help the team achieve more effective project meetings by structuring and conducting them to meet differing needs of the team members.
- Improve productivity by making project assignments that allow each person to work according to his/her own personal style preferences, and to understand how others prefer to work.
- Help the team meet deadlines more easily by understanding how different types deal with time.
- Help you better understand yourself and enhance your relationships with the client and project team.

Although there are many good uses, there is one thing for which knowledge of an individual's preferences should not be used—prejudging a person's ability to perform a project task. There is

nothing in a person's style preferences that need be a constraint to performing a task on a project. As discussed later, a type of task may be more stressful for some depending on their preferences, but a style preference does not limit ability.

PREFERENCES

The MBTI identifies preferences on the following four scales, with two opposite preferences defining the extremities or poles of each scale:

- Where an individual prefers to focus his/her attention and get energy (extraversion or introversion).
- The way an individual prefers to take in information (sensing or intuition).
- The way an individual prefers to make decisions (thinking or feeling).
- The way an individual orients himself/herself to the external world (judging or perceiving).

Psychological type is the underlying personality pattern that results from the dynamic interaction of these preferences. It is important to realize that the above preferences are only preferences. A useful analogy is right-handedness versus left-handedness. If you have a preference for right-handedness, it does not mean that you never use your left hand. Although there may be instances where you will use only your right hand (e.g., writing a letter longhand, throwing a baseball), there may be situations where both hands are equally important (e.g., typing a letter, hitting a baseball). You may strongly prefer to use your right hand or you may prefer it hardly at all if you border on being ambidextrous. The same is true for the preferences listed above. According to Jung's theory, everyone has a natural preference for one of the two poles on each of the four preference scales. A person may use both poles at different times, but not both at once and not with equal confidence. There is one pole that a person prefers, and when using it, the person generally feels most at ease, competent, and energetic.

It is critical to recognize that there is no right or wrong to these preferences. Each identifies normal and valuable human behaviors. Each has its strengths and each has its own potential blind spots. The best baseball teams have a mixture of right and left-handed batters and pitchers. Not surprisingly, a study by Blaylock (1983) found that project teams with complementary preferences for taking in information and for making judgments outperformed teams where all of the team members had the same preferences.

Myers (1998) has summarized some of the characteristics for each of the poles of the different preference scales. These are characteristics exhibited when a person is doing things in his/her most natural way, outside of any roles that he/she may have to play in an assignment or job. For simplicity, we will refer to those with a preference for one pole of a scale such as extraversion as extraverts and those with a preference for the opposing pole such as introversion as introverts; but please keep in mind that everyone uses both poles, extraversion and introversion in this example, at different times. This shorthand for preferences is for convenience, and is not a statement that anyone exclusively uses only one pole of a preference scale. As you read the characteristics of opposing poles, you may find some associated with both poles that seem to fit you. This is not unusual. If the characteristics of only one pole of the preference scale seem to fit you, you have

a very clear preference for that pole. If half the characteristics of one pole and half of the other pole seem to fit, then your preference is less clear, although you probably have a slight one.

EXTRAVERSION (E) - INTROVERSION (I) PREFERENCE

Have you ever been in a meeting where some dominated the discussion while others did not speak up but later voiced contrary opinions or offered valuable input?

Extroversion Preference

The general characteristics of those with a preference for extraversion are shown in Table 1. People with a preference for extraversion are energized by interacting with others. They prefer to bounce ideas off others and talk things out. Extraverts may prefer to have a radio or television playing in the background while they are working. They are usually perceived as easily approachable and gregarious. Extraverts prefer to generate their ideas in groups rather than by themselves. They may become drained if they spend too much time in reflective thinking without being able to bounce their ideas off others. They like the opportunity to express their thoughts and may become frustrated if they are not given a chance to voice them.

TABLE 1. Characteristics and Stressful Situations for Extraverts

Characteristics of Extraverts	Stressful Situations for Extraverts
<ul style="list-style-type: none"> • Prefer to communicate by talking • Work out ideas by talking them through • Learn best through doing or discussing • Have broad interests • Are sociable and expressive • Readily take initiative in work and relationships • Think out loud 	<ul style="list-style-type: none"> • Working alone • Having to communicate by e-mail • Lengthy work periods with no breaks or interruptions • Having to focus in depth on only one project task • Getting only written feedback on project performance

Introversion Preference

The general characteristics of those with a preference for introversion are shown in Table 2. People with a preference for introversion usually work best and are energized when they have quiet time to think things through. Introverts prefer to think things through before saying them and wish that others would do the same. They prefer to have a quiet workplace. They may be perceived as good listeners, but also may be perceived as distant and hard to get to know. They usually find meetings or parties to be an energy drain and need some quiet time to recharge their energy. Introverts prefer to state their thoughts without being interrupted. They process their thoughts internally and dismiss many of them as being of no interest to others. Because of their internal processing of ideas, the introvert may reach a conclusion before discussing his/her thought process. A person's extraversion-introversion preference is one of the easiest to determine, merely by interacting with the other person. The above characteristics usually are evident after a relatively brief time of interaction.

TABLE 2. Characteristics and Stressful Situations for Introverts

Characteristics of Introverts	Stressful Situations for Introverts
<ul style="list-style-type: none"> • Prefer to communicate in writing • Work out ideas by reflecting on them • Learn best by reflection and mental practice • Focus in depth on their interests • May be seen as private and contained • Take the initiative when the situation or issue is very important to them • Think, then talk 	<ul style="list-style-type: none"> • Working face-to-face with others for prolonged periods • Interacting with others frequently – in person or on the phone • Having to act quickly without time for reflection • Having too many concurrent tasks and demands • Getting frequent verbal feedback

Project Applications

The extraversion-introversion differences can lead to tension on a project team. The extraverts may often invade the quiet time that the introvert needs to think things through, but the extraverts may find that their thought process is inhibited unless they can talk things through with someone. An extravert may be merely thinking out loud about several different ideas, but the introvert may believe that the extravert must certainly have thought it through before speaking. As a result, the introvert may take each idea as something that is to be pursued during the project. This can lead to scope creep. In this situation, the introvert should push for clarity and meaning before accepting what the extravert has been saying. Extraverts can help by saying that they are just thinking out loud and by being clear when they are stating a conclusion rather than a thought.

On one team that we worked with, there were 16 introverts and two extraverts. The extraverts were seen by the others as disruptive to team meetings because they were perceived as shooting from the hip and not sticking to the points on the agenda. The entire team took the MBTI and gained an understanding of the extraversion-introversion differences. The extraverts now preface any out-loud thinking by reminding the other team members that they are about to use their extraversion preference to throw out some ideas, and they ask assistance from the group in thinking through the ideas. Recognizing their differences has contributed to a more cohesive team.

Because an introvert likes time to think things through, it is not productive to give an introvert a lot of new information and ask for an immediate response. Often, when not given time to think things through, an introvert's initial response will be negative to new ideas or suggested changes. Give an introvert time to think over a suggested project change or review a draft before asking for his/her response. Introverts may be more comfortable giving their response in writing.

Project teams sometimes engage in brainstorming sessions to seek creative solutions to project issues. Without some controls, the extraverts will quickly dominate such a session and much potentially valuable input from the introverts may be lost. To avoid this, allow a few minutes at the start of the brainstorming session for each participant to write down his/her own ideas on the issue before the group. Then, take one idea from each person and write it on a flip chart before the entire group. Continue taking one idea per person until each person has exhausted his/ her individual list. Do not allow any discussion of the ideas until all of the ideas have been

listed. Then clarify and discuss each idea. This approach equalizes participation, provides introverts some time to think about their contributions, and allows the extraverts the opportunity to discuss their ideas.

Projects are always being done within time constraints. To use time efficiently, both extraverts and introverts can benefit by monitoring their own preference as well as understanding others. Introverts must recognize that sooner or later (preferably sooner) they must stop thinking and start talking. Introverts need to work on sharing their ideas more quickly and should not rule out any of their ideas or thoughts as being too trivial to bring up. They should not hold others to the first words out of their mouths, because an extravert may just be thinking aloud. Extraverts must recognize that they must sooner or later (preferably sooner) stop talking and start listening. Extraverts need to make a special effort to listen, avoid interrupting, and not assume that others' pauses in the discussion are an invitation to jump in. Introverts may be stopping to reflect on what they are saying before continuing.

Extraverts typically need more positive reinforcement and are more likely to praise team members for a task well done. Introverts may think such praise will be perceived as insincere. Although it will require a conscious effort on their part, introverts need to recognize the need to praise team members for their good work.

SENSING (S) - INTUITIVE (N) PREFERENCE

Have you seen tension between some people who seem to focus on the big picture and others who seem to focus on the details?

Sensing Preference

The general characteristics of those with a preference for sensing are shown in Table 3. People with a preference for sensing prefer to take in the details of information that is real and tangible. They tend to be very observant about the specific details of what is going on around them and focus on practical realities. A sensor prefers specific answers to specific questions. Sensors like to concentrate on the task at hand and find most satisfaction in tasks that yield a tangible result. They are more comfortable working with facts and figures than theories. They are likely to be more comfortable working on the design phase (plans and specifications) of a project than on the conceptual planning phase. They prefer clear project task descriptions rather than an overall plan with the details to follow. Sensors like to hear about things in a logical sequence rather than randomly. They would rather be doing something than thinking about it.

TABLE 3. Characteristics and Stressful Situations for Sensors

Characteristics of Sensors	Stressful Situations for Sensors
<ul style="list-style-type: none"> • Focus on present realities • Prefer the factual and concrete • Focus on what is real and actual • Observe and remember specifics • Build carefully toward conclusions • Understand theories through practical application • Rely on and trust experience 	<ul style="list-style-type: none"> • Having to change the way things have been successfully done in past projects • Having to give an overview without the details • Looking for the big picture represented by the detailed facts • Focusing on tomorrow's possibilities rather than today's tasks

Intuition Preference

The general characteristics of those with a preference for intuition are shown in Table 4. People with a preference for intuition like to take in information by looking at the big picture. They focus on the relationships between the detailed facts and look for patterns and new possibilities. Intuitives tend to think about several things at once. They find future possibilities to be exciting and intriguing, more so than current information. Intuitives like to figure out how things work just for the pleasure of it. They look for connections behind things rather than accepting them at face value. Intuitives tend to give general directions and may get irritated when a team member pushes them to be more specific. They are more likely to be energized by working on the conceptual planning phase of a project than in preparing detailed design drawings and specifications.

TABLE 4. Characteristics and Stressful Situations for Intuitives

Characteristics of Intuitives	Stressful Situations for Intuitives
<ul style="list-style-type: none">• Are oriented toward future possibilities• Are imaginative and creative• Focus on patterns and meanings in data• Remember specifics when they relate to a pattern• Move quickly to a conclusion• Want to clarify a theory before putting it into practice• Trust inspiration	<ul style="list-style-type: none">• Having to do things because it is the way they were done in past projects• Having to attend to details• Checking the accuracy of facts• Focusing on past experience• Having to deal with today's tasks without seeing how they fit into the big picture for the project.

Again, you may see yourself as having some preferences related to both the sensor and the intuitive styles. This is not unusual. One's preference can also be affected by the situation. For example, even a person with a very strong preference for intuition must become a strong sensor by April 15 of each year to deal with the specific facts and figures of income tax returns. An introvert can become a situational extravert when presenting a paper on a favorite topic at a conference.

Project Applications

Both sensors and intuitives have valuable contributions to make to project teams. Sensors will press others to keep their ideas simple and to the point. Sensors will test the intuitives' broad concepts against reality. Sensors will push for common sense in even the most complex problem-solving situations. Intuitives will likely be using their imagination to see how the facts of the situation may be tied together to reach a creative solution. They will be throwing out alternatives that should be examined to be sure that the best solution is reached. A mix of sensors and intuitives on a project team makes it more likely that both the forest and the trees will be considered. However, there can be some types of projects whereby a mix of preferences may not have much benefit. For example, a team working on collecting and entering data into a maintenance management system will probably be best composed of sensors and would benefit little from incorporating an intuitive perspective.

The style differences between sensors and intuitives can also lead to project tensions. In one case, we saw that an architect and a mechanical engineer were at odds. The architect was

suggesting some conceptual changes to the ceiling of a building to improve the aesthetics of the reception area. The mechanical engineer was saying that it would never work because the revised design was intruding on the space where he had installed heating ducts. The intuitive architect was seeing the big picture and the sensing mechanical engineer was focusing on the details. The situation had degenerated to the engineer ridiculing the architect's concept and crying "scope creep." The architect was criticizing the engineer for lack of imagination, rigidity, and lack of client orientation. Understanding the differences in their natural tendencies helped them to better understand the other's perspective and work together to make the detailed changes that would be needed to support the new concept.

Sensors and intuitives will deal differently with a request for a preliminary estimate of cost on a project. Intuitives are likely to be comfortable giving an estimate based on experience with other similar projects. Sensors are likely to respond by asking for more details so that they can build an item-by-item estimate. The sensor may even view the request as unanswerable because it calls for information that the sensor does not have. In these situations, it is helpful for the sensor to keep in mind that a ballpark request by an intuitive can be responded to without being exact. The intuitive should recognize that the specifics that a sensor is seeking are an effort to obtain what he/she perceives to be necessary information.

The closeout phase of a project involves dealing with a lot of details such as deciding which materials can be discarded, seeing that all relevant materials are collected for storage and not scattered among individual files, and so forth. Although all may have the same ability to do these tasks, it will likely be much less stressful for a sensor rather than an intuitive to deal with them. Although a sensor or an intuitive may be equally capable of doing either planning or design work, intuitives will likely feel more energized when working on the conceptual planning phase of a project, while sensors may be more energized by working on the detailed design phase.

The sensing and intuition preferences both play an important part in effective problem solving. First, gather the facts by using sensing to examine the details of the issue or problem. Then use intuition to develop possible causes and solutions. This approach asks a person to use both of these preferences, both one's preferred style and non-preferred style. Because this is difficult for some, there is value in having a mix of sensing and intuitive preferences on a project team.

THINKING (T) - FEELING (F) PREFERENCE

Are decisions on the project being delayed because some are concerned about the impacts the decision will have on people while others are emphasizing the tangible pros and cons?

Thinking Preference

The general characteristics of those with a preference for thinking are shown in Table 5. People with a thinking preference look at the logical consequences of a decision. They objectively examine the pros and cons. They are energized by examining an issue to find what needs to be done so that they can resolve the issue. They like to find a standard or principle that applies to all similar situations. Thinkers tend to settle disputes based on what they believe is fair and truthful rather than what will make people happy. They often appear to be calm and objective in

situations where others appear upset. Thinkers do not mind making difficult decisions and think it is more important to be right than liked. They are impressed with logical and scientific arguments.

TABLE 5. Characteristics and Stressful Situations for Thinkers

Characteristics of Thinkers	Stressful Situations for Thinkers
<ul style="list-style-type: none"> • Are analytical • Use cause-and-effect reasoning • Solve problems with logic • Strive for an objective standard of truth • Can be perceived as tough minded • Want everyone treated equally 	<ul style="list-style-type: none"> • Noticing and appreciating positive performance by others • Focusing on processes and people • Using empathy and personal values to make decisions • Having others perceive their questions as divisive

Feeling Preference

The general characteristics of those with a preference for feeling are shown in Table 6. Those with a feeling preference consider what is important to them and to others that are involved. They mentally place themselves into the situation so that they can identify with others and make a decision based on their values about honoring people. They are energized by supporting others. Feelers consider that a good decision is one that takes impacts on others into account. Feelers give a lot of weight to how a decision will affect others. They prefer harmony over clarity and do not like conflict. They enjoy providing needed services to people. They will extend themselves to meet others' needs, even at the expense of their own comfort.

TABLE 6. Characteristics and Stressful Situations for Feelers

Characteristics of Feelers	Stressful Situations for Feelers
<ul style="list-style-type: none"> • Are empathetic • Are guided by personal values • Assess impacts of decisions on people • Strive for harmony • Are compassionate • Can be perceived as tenderhearted • Want everyone treated as an individual 	<ul style="list-style-type: none"> • Setting criteria and standards • Focusing on project tasks only to the exclusion of how they affect others • Being expected to use logic alone to make decisions • Critiquing others' work and looking for flaws

As with the other preferences, there is no intention to imply that thinkers do not have feelings or that feelers do not think. It is unfortunate that Jung used the terms thinking, which is often associated with intellect, and feeling, which often is associated with emotion, to describe the decision-making process. Both types can be equally intellectual and emotional. The terms are used to describe the preferred decision-making style and have nothing to do with intellect or emotion.

The thinking and feeling preferences are the only two preferences where there is any gender difference. About two-thirds of males have a thinking preference and about two-thirds of females have a feeling preference.

Project Applications

The writers worked with one engineer who was perceived by his coworkers as very effective in getting new projects for the consulting firm. Once the project was obtained, he was seen as losing interest, even though he was the project manager. The result was that his projects rarely met deadlines or budgets. He was an extravert with a strong feeling preference, and was extremely effective in establishing rapport with potential clients who were excited about working with him as the project manager. He also had a strong intuitive preference and little interest in the details of the projects once the conceptual plans were worked out. The solution was to back him up with an assistant project manager with strong sensing and thinking preferences to see that the detailed project work got done on time. The project manager could then focus on maintaining the relationship with the client and seeing that the client and team remained focused on the big picture.

The Edsel automobile, introduced by Ford Motor Company in 1958, is a classic example of what can happen when an engineering team is made up of predominantly thinkers. The project engineers designed a car that was very advanced technically, with innovative features such as a push-button transmission and innovative styling. The Edsel project team was confident that they had the best-engineered car on the market. Unfortunately, no one on the team considered the subjective (feeling) impact of the car. How would people feel about a car that was so different? The fact that the car did not sell showed that people did not feel good about the Edsel. There are many other examples whereby the thinking engineering team overlooked the feeling aspects of their work. Even though they produced a technically superior end result (beta format video recorders, for example), the project was a failure. Every project team needs enough members capable of using their feeling preference to consider how the end user of their work will feel about the results.

Both of these preferences also play a role in effective problem solving. After applying the sensing and intuition preferences to collect the needed details and brainstorm potential solutions, the options should be analyzed objectively by using thinking. The impacts can then be weighed by using feeling to consider how people will be affected. A mixture of team members with different preferences may avoid a potential blind spot in the decision process.

JUDGING (J) - PERCEIVING (P) PREFERENCE

Are some people on the team always late for meetings, causing others who always are on time to become quite irritated?

Judging Preference

The general characteristics of those with a preference for judging are shown in Table 7. People who prefer judging like to live in a planned and orderly way. They want to make decisions, reach closure, and move on. Judgers tend to be organized and structured. They like to have things settled. Schedules are very important to them. Judgers do not like clutter and usually have a clean, orderly desk and office. They have a place for everything and are not happy until everything is in its place. They do not like surprises. They have a schedule and plan for their project work, and may get flustered if things do not go as planned. They keep thorough to-do lists. They start

their project work early to avoid last-minute crunches, which they find to be very stressful. It is difficult for a judger to relax until the work is done.

TABLE 7. Characteristics and Stressful Situations for Judgers

Characteristics of Judgers	Stressful Situations for Judgers
<ul style="list-style-type: none"> • Are scheduled • Organize their lives • Are systematic • Are methodical • Make short and long-term plans • Like to have things decided • Try to avoid last-minute stress 	<ul style="list-style-type: none"> • Waiting for project structure to emerge from a general planning process • Feeling uncertainty about time frames and deadlines • Rushing at the last minute to meet a deadline • Dealing with surprises

Perceiving Preference

The general characteristics of those with a preference for perceiving are shown in Table 8. People who prefer perceiving like to live in a flexible, spontaneous way. Detailed plans and schedules feel confining to a perceiver. They prefer to stay open to information and last-minute options. They enjoy the process more than closure. A perceiver likes to explore new ways of doing things. Perceivers often do not have a detailed plan for their project work, but prefer to see what the project demands. Neatness is not as important as spontaneity and creativity. It is difficult for perceivers to start a task any sooner than they perceive is absolutely necessary; they are energized by the pressure of meeting a deadline. They have no problem relaxing first and doing the work later. Perceivers like to keep their options open and often avoid being pinned down. Time commitments are approximate, not absolute.

TABLE 8. Characteristics and Stressful Situations for Perceivers

Characteristics of Perceivers	Stressful Situations for Perceivers
<ul style="list-style-type: none"> • Are spontaneous • Are flexible • Are casual • Prefer the open ended • Are adaptable • Like things loose and open to change • Energized by last-minute pressure 	<ul style="list-style-type: none"> • Having to plan ahead • Working within time frames and deadlines • Having to finish and move on • Facing others' distrust that their last-minute bursts of energy will meet the project deadline

Project Applications

The writers worked with an architect who has a clear preference for perceiving, and who illustrates the spontaneity that can be demonstrated by a perceiver. His wife asked him to go to the store to buy a gallon of milk. On his trip to the store, he decided to buy a Range Rover and forgot the milk. We have observed him preparing for training sessions that he conducts. While a judger would prepare a detailed agenda and assemble a training manual and related material in advance, this perceiver throws any materials he thinks might be relevant as handouts into a box and takes off for the training session with no detailed agenda in mind. He works well with other perceivers but can irritate judgers. By recognizing the nature of his audience, he can force

himself to alter his personal preferences to better align with his audience, which is usually a mixture of preferences.

The writers worked with one engineering firm where the staff was very frustrated by the lack of decision making by their management. The MBTI results showed that every member of the board had a perceiving preference, an unusual situation, as past studies (Kroegeer and Thuesen 1992) have shown that at least 60% of managers have a judging preference. By recognizing their tendency to get bogged down in their enjoyment of the process of discussing issues, they restructured their meeting agendas to establish a time where closure of the process on each agenda item was to be achieved and a decision made. They also added a facilitator to their meetings to help keep them on track toward making decisions.

A situation that is ripe for problems is where a project manager has a perceiving preference and is working with a client that has a strong judging preference. We witnessed the disastrous results once. The perceiving project manager arrived at the first project meeting 20 minutes late, which a perceiver may view as "on time." The judging client viewed it as 20 minutes late and an insult. The client bluntly told the project manager not to do it again. The project manager did do it again – and again – and the client fired the firm. In another similar situation, the perceiving project manager listened to the client's complaint about tardiness and moved his departure time for meetings at the client's office forward 30 minutes so that he was always a few minutes early rather than a few minutes late.

A mix of judging and perceiving preferences brings strength to a project team. Because of their desire for closure, judges sometimes push to meet or beat deadlines even at times when, due to changed circumstances, the project deadline may not be the most important consideration. Perceivers can offset this tendency by pushing to keep the project priorities open. Judges assist the perceivers by reminding them that there are schedules to meet and that project issues need closure. Have enough judges on the team to be sure you stay on course and enough perceivers to be sure you do not make good time going in the wrong direction.

KEYS TO EFFECTIVE USE OF PSYCHOLOGICAL TYPE

The following aspects of psychological type should be kept in mind:

- The purpose of type theory is not to label people and put them into boxes to limit their possibilities. The purpose is to explain, so that you understand yourself and others to improve relationships, not to confine.
- Type is for understanding, not for excuses. It should never be used to prejudge your own or another's ability to do anything. For example, saying you have a preference for intuition and therefore do not do details is an excuse. It would be more useful to say that it is easier for you to grasp the details when you have the overall concept developed.
- Be aware of your biases toward preferences different from your own. For example, someone with a strong judging preference may have a bias that those with a perceiving preference are going to procrastinate. Remember that the judging-perceiving preferences are about whether an individual prefers to structure and schedule the decision-making process or leave it open for more information. Both approaches can bring value to a project.

- There are no right or wrong types. Each type brings its own strength to the project team and to other working relationships.
- Everyone uses all preferences to some degree. It can be helpful to view a situation through the eyes of your opposite preference or type. This will increase your familiarity with the way others may be thinking, and will increase your ability to call on your opposite preferences when a situation may demand that you do so.
- Personality is much more complex than these type preferences. Although very useful, type theory does not explain everything involved in working or personal relationships.

PREFERENCES OF PROJECT TEAM MEMBERS IN ENGINEERING FIRMS

Certain professions are more attractive to a given type than others. Although the type-related strengths and vulnerabilities of each team vary with its predominant types, understanding the types generally attracted to engineering provides some insight into tendencies that may often occur. It is also useful to compare these types to the general public because some engineering teams must interact with the public at public hearings, with citizens' advisory committees, and with clients that are non-engineers. Such a comparison illustrates some potential differences in type between engineers and the overall population that could lead to differing project perspectives.

TABLE 9. Style Preferences of Project Team Members in Consulting Firms

Group	Introverts (I)	Sensors (S)	Thinkers (T)	Judgers (J)
Engineering project team members	62%	54%	75%	67%
US Population	50%	73%	40%	54%

During the course of providing management consultation to a variety of consulting engineering firms, the writers have administered the MBTI many times and have collected MBTI preference information from 218 project managers and project engineers. Table 9 compares the majority preferences of these engineering team members with those of the U.S. population. The U.S. population data are based upon the reported MBTI results from 3,009 individuals (Myers et al. 1998).

The preceding sections of this paper describe the differences that may result from the type preferences shown in Table 9, and should be referred to for a more complete description of how they might affect project approaches and perspectives. Generally, when compared to the population as a whole, the engineering teams are more likely to prefer to think things through rather than talk things through, look more at the forest than the trees, rely more heavily on logic and rationale in making decisions than how the decision affects others, be more structured in their approach, and be more eager to reach closure.

Table 10 compares type preferences that are attracted to other fields to further illustrate how individuals with differing preferences are attracted to different professions. The life insurance field is much more attractive to extraverts and sensors than is engineering. Management consultants tend to be more extraverted and even more focused on the big picture than are

engineers. Basketball officials offer an example where there is an extremely strong preference (97% of the officials) for details (sensing). All of the above professions tend to be more attractive to those with a feeling preference than does engineering. Only the life insurance agents and basketball officials have a stronger preference for closure (judging preference) than do engineers.

TABLE 10. Comparison of Type Preferences in Various Professions

Group	Sample Size	Introverts (I)	Sensors (S)	Thinkers (T)	Judgers (J)
Engineering project team members	218	62%	54%	75%	67%
Life insurance agents	223	26%	83%	63%	71%
Basketball officials	Not available	34%	97%	Not available	81%
Management consultants	150	42%	33%	62%	59%
Human-resources personnel	380	41%	38%	61%	61%

Note: Data for other professions are from Myers et al. (1998), Scott and Scott (1996), and Lewis et al. (1996).

Since engineering teams have a frequent preference for introversion, building relationships with other team members and with clients is often a challenge for the teams that will require effort to overcome, because the majority of team members are not energized by interacting with others. Teams with a majority of introverts must be cautious about over reliance on e-mail. Although e-mail is a very efficient way to transfer information, it is not an effective way to truly communicate. The team members will have to periodically call upon their situational extraversion ability and meet face-to-face with other individuals or the team.

Psychological type dynamics are more complex than just the characteristics associated with each preference scale. The interaction between preferences is a key to deeper understanding of related behaviors. There are 16 possible combinations of preferences, leading to 16 different patterns of personality. The letters associated with each preference are used to summarize an individual's overall preferences. For example, an individual's preferences for extraversion, intuition, feeling, and perception would be summarized as ENFP. A discussion of the dynamic interaction goes well beyond the scope of this introductory paper. The reader will find excellent discussions of these interactions in several of the references (Kroeger and Thuesen 1992; Brock 1994; Myers and Kirby 1994; Myers 1998; Myers et al. 1998). Table 11 compares the overall type preferences of the 218 engineers in our sample with the U.S. population as a whole.

TABLE 11. Distribution of Type Preferences

Group	Type															
	ISTJ	ISFJ	INFJ	INTJ	ISTP	ISFP	INFP	INTP	ESTP	ESFP	ENFP	ENTP	ESTJ	ESFJ	ENFJ	ENTJ
Engineers	23%	5%	2%	14%	6%	2%	5%	6%	5%	1%	4%	5%	8%	4%	2%	7%
US population	11.6%	13.8%	1.5%	2.1%	5.4%	8.8%	4.4%	3.3%	4.3%	8.5%	8.1%	3.2%	8.7%	12.3%	2.5%	1.8%

The ratio of a given type in a profession relative to the population as a whole indicates whether the field is more or less attractive to a given type, and is referred to as the self-selection ratio. A self-selection ratio greater than 1.0 indicates that there is a higher proportion of a given type preference in a profession than in the population as a whole. For example, the self-selection ratio for engineers with an INTJ preference is 14/2.1 or 6.7, indicating that the engineering field is very attractive to individuals with an INTJ preference. Table 11 shows that:

- ISTJ is the most preferred type among the engineers. Of the 16 potential types, nearly 25% of the engineers have an ISTJ preference.
- Engineers with a TJ preference (ISTJ, INTJ, ESTJ, ENTJ) comprise 53% of the engineers, 2.2 times the percentage of the general population.
- Engineers with an FP preference (ISFP, INFP, ESFP, ENFP) comprise only 11% of the engineers, with a self-selection ratio of only about 0.33, indicating that engineering is not a very attractive field for individuals with feeling and perception preferences.

As shown by the data in Table 11, individuals with a thinking and judging preference are attracted to the engineering field. Those with a TJ preference have a tendency to strive for quick closure of issues using logic and rationale, while those with an FP preference have a tendency to keep the decision-making process open as long as possible and base their decisions more on the impacts on the people involved. Considering the very strong TJ preferences often found in project teams in engineering firms and the few with an FP preference who are attracted to engineering, it is important that these teams consciously take the time to consider what matters to others and the values of others when making decisions and interacting with other team members and clients. It is also important that they avoid the tendency to rush to closure.

An example engineering project team can be used to illustrate how a team aware of its tendencies can include specific steps and assignments in the project approach to compensate for its potential vulnerabilities. This team may encounter problems such as those explained below.

- Relationships on the team and with the client suffer because there are not enough face-to-face interactions (not using extraversion). A potential solution is as follows: The project manager schedules a portion of his/her time each week to visit with each team member and take any appropriate actions based on what is learned. This will take a significant, conscious effort if the project manager also has an introversion preference. Schedule Friday lunches for the team. Periodically, schedule a lunch meeting with the client and the team, or selected team members.
- The team members are focused on the details of the technical work and so focused on today that they are blindsided by the unexpected. They view that it is more effective to be doing something useful today than to be wondering about tomorrow (using their sensing preference). A potential solution is as follows: Early in the project, use the previously described brainstorming technique in a team meeting, with the purpose of identifying problems that could arise on the project and how they could be addressed.
- The team members are so focused on the logical steps of the work (thinking) that they overlook how the client is going to feel about the end result. They may be building another Edsel! A potential solution is as follows: Designate a team member or members to meet

periodically with the client solely for the purpose of asking how the client is feeling about how the project is proceeding—not to discuss technical aspects of the work.

- The team members are so focused on reaching closure (judging) that they do not take time to periodically step back and see if some new alternatives should be considered. A potential solution is as follows: At selected milestones on the project, have members or individuals not otherwise involved in the project conduct a review of how work to date is aligning with the project goals and discuss if changed circumstances dictate a change in those goals.

Of course, each team will have its own unique set of type-related tendencies and solutions to consider, based upon its characteristics and the nature of the project.

CONCLUSION

Project teams can increase their chances of success by understanding and capitalizing on different behavioral styles related to psychological type. The Myers-Briggs Type Indicator is a valuable tool for identifying and understanding these differences, developing ways to improve working relationships, and achieving project success.

APPENDIX. REFERENCES

- Blaylock, B. K. (1983). "Teamwork in a simulated production environment." *J. Psychological Type*, 32-37.
- Brock, S. A. (1994). *Using type in selling*, Consulting Psychologists Press, Palo Alto, Calif.
- Kroeger, O., and Thuesen, J. M. (1992). *Type talk at work*, Dell, New York.
- Lewis, R. M., Tobacyk, J. J., Dawson, L. E., Jurkus, A. F., and Means, T. L. (1996). "Psychological types of male multi-line insurance agents." *J. Psychological Type*, 37-39.
- Myers, I. B. (1998). *Introduction to type*, Consulting Psychologists Press, Palo Alto, Calif.
- Myers, I. B., McCauley, M. H., Quenk, N. L., and Hammer, A. L. (1998). *MBTI manual—A guide to the development and use of the Myers-Briggs type indicator*, Consulting Psychologists Press, Palo Alto, Calif.
- Myers, K. D., and Kirby, L. K. (1994). *Introduction to type dynamics and development*, Consulting Psychologists Press, Palo Alto, Calif.
- Scott, T. H., and Scott, J. C. (1996). "Psychological type of outstanding high school basketball officials." *J. Psychological Type*, 40-42.