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Do Athletic Teams, Fraternities, and MQP Groups Attract the Same Psychological Types?

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Abstract

This project has evolved from the data mining and analysis of WPI's transfer students Myers Briggs Type Indicator (MBTI) information to the hypothesis that every grouping of students contains a unique ratio of the sixteen MBTI types that differ from the general student body. Due to the difficulty of administering the MBTI tests of transfer students, which routinely takes place during freshman orientation, it became evident that the projects objective needed to be changed. The new direction of the project studies the MBTI ratio's of such student groupings as varsity athletics, fraternal organizations, and the project groups of both WPI and Boston University.

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Introduction

Objectives

The specific goals for our project consisted of five major topic areas. The theory of this project is to begin mapping the social structure of the WPI campus to see if the "Birds of a Feather" (flock together," hypothesis takes merit, i.e. whether the social groups created by people with the same social behavior and common interests, were actually clusters of people having similar personalities and learning styles.

This was not our first theory. The first project goal was to compare the MBTI distribution of the transfer students entering WPI in 2000, to the distribution typically found in the normal freshman entering in 1997, 1998, and 1999. In this case we expected to find different personality types entering as transfers, or at least a different mix of individuals when compared to the rest of the WPI student body. This aspect of the project required us to do the following:

a) Obtain MBTI (and GCSI, if possible) results from all transfers, students starting with those arriving in 2000 and those preparing to graduate with the Class of 2001 (about 50 transfer students/year).

b) Have each transfer student take the transfer student survey that we developed.

c) Compare the distribution of regular students and transfer students by learning style as measured by the MBTI

This was sort of a pre-step to doing the rest of the study since we wanted to close as many gaps in the data base as possible and the lapse in gathering data from transfer students was by far the largest lapse in the existing data base. It was also a serious lapse since it meant the whole student body might be systematically changing its shape as some students left WPI (attrition) and others arrived to take their place (transfers) and no one would know about it.

The second goal was to compare the MBTI learning styles of athletic and club teams to the general population and each other.

a) Obtain MBTI and GCSI information from athletes who missed the part of orientation where the examination was administered to the rest of the WPI incoming freshmen and transfers.

b) Analyze the data to determine what types of learners tend to play what sports.

c) We also wanted to find an effective way to present our MBTI distribution results using graphs to support the numerical analysis

The third goal was to compare the learning style distribution of fraternities:

a) Obtain MBTI and GCSI information for missing fraternity members.

b) Analyze the data to determine what types of learning styles tend to join what fraternity.

c) Determine what types of learning styles decide to live together and see if that makes sense in terms of what the reputation and role of the fraternity is on campus.

The fourth goal was to study MQP groups:

a) Obtain MBTI and GCSI information for the missing MQP members, which in their case included Class of 2000 and Class of 2002 students working with seniors in the Class of 2001. Again transfer student gaps were of great concern as these groups are small. Further, the class of 2000 was not in the MBTI study at all.

b) Determine whether MQP type, to see how much they tend to be based on pre-existing social relationships.

c) Determine which types of learning styles work well together, in terms of conflict level and quality of overall performance.

d) Have the MQP members take our MQP survey, which would answer the prior relationship and conflict level question.

The fifth goal was to do a comparative study between the ME/Aero departments of WPI and BU:

a) Attend project presentation day at BU and - again fill gaps- to obtain MBTI and GCSI data from the presenting students.

b) Have the presenting students take our MQP survey, which will give us the needed information to do a comparative study.

The implicit question here was whether the same types of learners were attracted to the same field. At BU the senior projects tend to be assigned and everyone is in the same class, with groups being created that are about the same size, 3-4 students. No one can work alone or drop out. No one can decide not to take this course. In principle the groups at BU should be more diverse than those at WPI, but maybe not. Perhaps like types given a fixed range of alternative project to choose from, self select themselves onto the same team in such a way that they come out homogeneous.

In practice, not only did the transfer data collection not go as planed, as only 12 out 50 transfers of the class of 2004 cooperated with our requests, the MBTI returnees from BU were abysmal. We were able to successfully obtain the data for the GCSI and our own survey from the BU students, but the MBTI material we left with the BU students were never seen again. On the other hand we were very successful with obtaining the missing data set gaps with the football team, basketball team, and the fraternities. These groups were very cooperative in filling out our survey and the missing data. The MQP study of the MBTI represents a more diverse outcome. While we were able to obtain some of the missing data and collect over 100 of our own survey, there was still an overwhelming amount of MQP groups which left us without enough information to describe and distinguish the group from others. There are a few things that you can say on the basis of the non-

random formed groups(105), but we will really not be able to answer all of our questions from the data obtained.

This study began as a pilot test of various data gathering strategies that saved the GCSI study of the BU students and set the stage for a future MQP study, and lead to the recruitment of transfer students. However, our hypothesis can be given a serious test using the data collected from the athletic teams and the fraternities.

Why the MBTI was adopted for this study?

We caused a lot of nuisance for ourselves by not wanting to use the GCSI in this study. The BU student GSCI data collection was reasonably complete and 594 members of WPI's class of 2001 had already filled out the GCSI during their orientation. Only 546 members of the 2001 class of WPI had completed the MBTI, the MBTI take longer for the students to complete raising the level of students unwillingness to cooperate with our study. One has to work with a qualified user to give appropriated feedback; the materials are more expensive as well as harder and more tedious to score. Still, what it gets at made it highly appropriate for their study, and candidly, we just found it more interesting, despite its greater logistical challenge and theoretical complexity. A description of what Myers wanted to measure with the MBTI is based on the Jungian Theory, which will make it clear why this was the kind of measurement that would show the choice of problems in studies, extra-curricular activities, and the sense of social connection and mutual support that people join fraternities to find.

What is the MBTI?

The Myers-Briggs Type Indicator (MBTI) was developed by a mother and daughter team of Katharine Briggs and Isabel Myers to help people find more satisfaction in their lives and careers by identifying their preferences. It is described as a measure to help individuals grow through an understanding and appreciation of individual differences in healthy personality and to enhance harmony and productivity among diverse groups. There are eight personality preferences, which are broken up into four scales.

The MBTI's Four Scales

The MBTI is made up of four scales that are based on the Jungian concepts, in general that deal with Energizing (orientation of energy), Attending (perception), Deciding (judgment), and Living (orientation to the outside world). In each of these categories there are two alternative personality type factors, which are opposite of each other making up the 16 personality preference patterns that are possible. The two ways of Energizing are Extraversion and Introversion. The two ways of Attending are Sensing and Intuition. The two ways of Deciding are Thinking and Feeling and the two ways of Living are called Judgment and Perception.

Energizing: Extraverts have a preference for drawing energy from the outside world of people, activities, or things while Introverts prefer to draw energy from one's internal world of ideas, emotions, or impressions. The following table shows the differences in this preference[1]:

Extravert (E)	**Introvert (I)**
External	Internal
Outside thrust	Inside pull
Blurt it out	Keep it in
Breadth	Depth
Involved with people, things	Works with ideas, thoughts
Interaction	Concentration
Action	Reflection
Do-think-do	Think-do-think

Table 1 - Words Associated With Energizing

Attending: Sensing refers to a preference for taking in information through the five senses and noticing what is real. Intuition refers to taking in information through the sixth sense and paying attention to what might be rather then immediate practical relation of a situation. The table below demonstrates how Sensing and Intuition differ[2]:

[1] http://www.mbti-certified.com/mbti.htm

[2] http://www.mbti-certified.com/mbti.htm

Sensing (S)	Intuition (N)
The five senses	Sixth sense, hunches
What is real	What could be
Practical	Theoretical
Present orientation	Future possibilities
Facts	Insights
Using established skills	Learning new skills
Utility	Novelty
Step-by-step	Leap around

Table 2 - Words Associated With Attending

Deciding: Thinking refers to the preference for organizing and structuring information so as to make decisions in a logical and objective way that is analytical and impersonal and as free of subjective bias as possible. Feeling refers to the preference for organizing and structuring information so as to make a decision in a personal, value-oriented way, takes subjective considerations into account and empathizing with those affected. Refer to the table below for the difference between the Thinking and Feeling preferences[3]:

Thinking (T)	Feeling (F)
Head	Heart
Logical system	Value system
Objective	Subjective
Justice	Mercy
Critique	Compliment
Principles	Harmon
Reason	Empathy
Firm but fair	Compassionate

Table 3 - Words Associated With Deciding

Living: Judgment refers to a preference for living a planned and organized life, with structure and predictability. By contrast a perceptive wants to live a spontaneous and flexible life, and likes to

[3] http://www.mbti-certified.com/mbti.htm

preserve his or her options until the last minute. The table below shows how Judgment and Perception differ[4]:

Judgment (J)	Perception (P)
Planful	Spontaneous
Regulate	Flow
Control	Adapt
Settled	Tentative
Run one's life	Let life happen
Set goals	Gather information
Decisive	Open
Organized	Flexible

Table 4 - Words Associated With Living

[4] http://www.mbti-certified.com/mbti.htm

Dominant Function

The middle two preferences (SN and TF) are called the functions in MBTI language. For each type, one of these four functions takes the lead, or is most preferred. This function is called the dominant function.[5] An analogy may help to understand the importance of having a dominant function: no organization can function well without a sense of direction or purpose. The same holds true with a personality: no person can be effective or consistent without one of the functions taking the lead.

People use their dominant function most in their ideal world.[6] That is, if you are more energized by the external world (extraversion) that is where you use your dominant function. If you are more energized by the internal world (introversion), then you use your dominant inside.

[5] http://astrology.about.com/library/weekly/2001/aa020801c.htm?iam=dpile_1&terms=MBTI+Dominant+Function

[6] http://astrology.about.com/library/weekly/2001/aa020801c.htm?iam=dpile_1&terms=MBTI+Dominant+Function

Auxiliary Function

The other functions in the type code (besides the two middle letters) are called the auxiliary function because that helps out and supports the dominant function.[7] To continue the analogy, all organizations need at least two things to be effective: good information, and someone to make decisions about that information. The same is true of a personality. That is why if the dominant function is an attending function (S or N) then the auxiliary or secondary function, will be one of the deciding functions (T of F), and vise versa.

Besides balancing, attending and deciding, the auxiliary function helps to provide balance to the personality in another way, because the dominant and auxiliary are used in opposite worlds. In other words, if the dominant is extroverted, the auxiliary will be introverted. If the dominant is introverted, the auxiliary will be extroverted. One way to think about this is to think of the leader of an organization. Some leaders focus on the outer world: they concentrate on those people of things in the environment that might affect the organization. This kind of leader needs people to help maintain the internal functioning of the organization. Other leaders prefer to direct their energies primarily to the internal organization and delegate the external to others.

[7] http://astrology.about.com/library/weekly/2001/aa020801c.htm?iam=dpile_1&terms=MBTI+Auxillary+Function

Preference Order for Each Type

Your psychological type is described by the four preferences that you "voted for" when answering the 126 questions on the MBTI questionnaire. Since each of the eight preferences can be represented by a letter (E, I, S, N, T, F, J, or P), a four-letter code can be used as a short hand for indicating type. For example, ESTJ indicates a person that is energized by the external world (E), whose preferred way of attending to incoming information is sensing (S), whose way of deciding is thinking (T), and who adopts a judging (J) style of living.

Preference Grouping

An individual type is a combination of one preference from each of the four preference scales. When the four preference scales are combined in all possible ways, sixteen types result. These sixteen types are displayed on what is called a type table.[8] The type table is as follows:

	S	S	N	N	
I	ISTJ	ISFJ	INFJ	INTJ	J
I	ISTP	ISFP	INFP	INTP	P
E	ESTP	ESFP	ENFP	ENTP	P
E	ESTJ	ESFJ	ENFJ	ENTJ	J
	T	F	F	T	

Table 5 - MBTI Type Table

[8] http://astrology.about.com/library/weekly/2001/aa020801c.htm

Descriptions of the Sixteen Types

This section will pertain to describing the sixteen learning style types. It will help give a better understanding of each type.[9]

ISTJ: They are thorough, hard working, and pay very close attention to detail. Things are accomplished steadily and on schedule. Within organized structures, this type will work very well. They will reward those who follow the rules while getting the job done and use their knowledge and experience to make solid decisions. Some of the drawbacks of the ISTJ are that they may expect others to conform to their standard operating procedures, which would not encourage innovation, and also they could overlook the long-range implications to favor day-to-day operations.

ISTP: They are adept at managing situations, aware of facts, and not likely to be convinced by anything but reasoning. Things get done in spite of the rules, not because of them. They lead through actions by setting an example. Action oriented people focused on the immediate situation. A downfall to the ISTP is that they may keep important things to themselves and appear unconcerned to others.

ESTP: They are action-oriented, resourceful and realistic individuals who prefer to take the most efficient route. They always want to keep things moving so they will negotiate and seek a compromise to accomplish this. Because of this, they seek action and immediate results. An ESTP is responsive to the needs of the moment while also providing flexibility in doing a job. Their downfall is that they may rely too much on improvisation and miss the wider implications of their actions and may appear blunt and insensitive to others when acting quickly.

ESTJ: They are logical, decisive, and tough-minded and are able to organize facts and operations well in advance. Have the ability to see flaws in advance and critique programs in a logical way.

[9] http://astrology.about.com/gi/dynamic/offsite.htm?site=http://www.personalitypage.com/high%2Dlevel.html

They are quick to decide and apply and adapt past experiences to solve problems. Prefer working in an organized, structured, and task-oriented environment. Some of the problems with these types are that they may decide too quickly and may not see the need for change.

ISFJ: They are sympathetic, loyal, kind, and will go to any amount of trouble to help those in need of support. They take practical needs of people into account. Can be reluctant to accept leadership at first, but will step in when asked. Very conscientious people who work on well-structured tasks are calm and quiet, and very efficient. On the other hand, they may be overly pessimistic about the future and may not be seen as sufficiently tough-minded when presenting their views to others.

ISFP: They are gentle, considerate, compassionate towards those less fortunate, and have an open-minded flexible approach. Attend to the needs of people in the organization as they arise as well as act to ensure others' well-being. Prefer a cooperative team approach and use personal loyalty as a means of motivating others. An environment that is flexible, allows for private space, and people-oriented is preferred. The downfalls for these types are they may be too trusting and gullible and may not critique others when needed, but may be overly self-critical.

ESFP: They are friendly, outgoing, fun loving, and naturally drawn towards people. Help out organizations by presenting a positive image of the organization to others and accept and deal with people as they are. Like to work in lively, action-oriented, and harmonious environments. Some of the pitfalls of these people are that they may over-emphasize subjective data, may not reflect before jumping in, and may spend too much time socializing and neglect tasks.

ESFJ: They are helpful, tactful, compassionate, and place a high value on harmonious human interaction. Work well with others, especially on teams and pay close attention to people's needs and wants. Lead through personal attention to others and keep people well informed. Prefer to work in an organized, friendly, and an environment that has people who are sensitive. The downfall is that they

may avoid conflict and sweep problems under the rug and may not value their own priorities enough because of a desire to please others.

INFJ: They trust their own vision, quietly exert influence, and are insightful. Provide future-oriented insights directed at how to serve human needs and follow through on commitments. Lead through their vision of what is best for others and the organization and work to make their inspirations real. Prefer environments that contain people strongly focused on ideals that make a difference to human well being and allow for time and space for reflection. The downfall to these types is that they may find their ideas overlooked and underestimated and may operate with single-minded concentration, thereby ignoring other tasks that need to be done.

INFP: They are open-minded, idealistic, and flexible individuals who want their work to contribute to something that matters. Work to find a place for each person in an organization and draw people together around a common purpose. They take a facilitative approach and prefer unique leadership roles rather than conventional ones. Environments that are flexible, allow privacy, calm and quiet, and contain pleasant and committed people focused on values of importance to others are preferred. Some of the potentials problems are that they may delay completion of tasks because of perfectionism and may try to please too many people at the same time.

ENTP: They are enthusiastic, insightful, innovative, and tireless in pursuit of new possibilities. Initiate change and focus on possibilities, especially for people in organizations. Lead with energy and enthusiasm and like to be in charge of the start-up phase. Colorful, idea-oriented, lively, and unconstrained working environments are preferred. Problems that may arise are that they may move onto new ideas or projects without completing those already started and may overlook relevant details.

ENFJ: They are interpersonally adept, understanding, tolerant, and facilitators of good communication. They bring strong ideals of how organizations should treat people and enjoy leading

and facilitating teams. Lead through personal enthusiasm and take a participative stance in managing people and projects. They prefer to work in people-oriented, supportive and social, settled, and orderly environments. Some of the disadvantages may be that they idealize others and suffer from blind loyalty and sweep problems under the rug when in conflict.

INTJ: They are independent, individualistic, single-minded, and determined individuals who try their vision of possibilities regardless of universal skepticism. Organizes ideas into action plans, which allows his or her organization to understand the system as a whole. Drive themselves and others to obtain the organizations goals by acting strongly and forcefully in the fields of ideas. Prefer to work in an environment that includes effective and productive people, encourages and supports autonomy, and allows privacy for reflection. Some of the downfalls are that they appear so unyielding that others are afraid to approach or challenge them and criticize others in their striving for the ideal.

INTP: They are rational, curious, theoretical, and prefer to organize ideas rather than situations or people. Design logical and complex systems and demonstrate expertise in tackling complex problems within organizations. They lead through conceptual analysis of problems and goals and prefer to lead other independent types while seeking autonomy for themselves. Their ideal environment contains independent thinkers focused on solving complex problems and rewards self-determination. Some of the downfalls are that they may be too abstract and therefore unrealistic about necessary follow-through and focus overly on minor inconsistencies at the expense of teamwork and harmony.

ENTP: They are innovative, versatile, analytical, and attracted to entrepreneurial ideas. Help organizations to view limitations as challenges to be overcome and provide new ways to do things. They plan theoretical systems to address organizational needs and encourage independence in others. Their ideal environment contains independent people working on models to solve complex problems and includes competent people. Some of the pitfalls of these people are that they become lost in the

model, forgetting about current realities and may be competitive and unappreciative of the input of others.

ENTJ: They are logical, organized, structured, and decisive about what they vie as conceptually valid. In organizations, they develop well-thought-out plans and provide structure to the organization. They manage directly and are tough when necessary and take an action-oriented energetic approach. Challenging, structured, goal-oriented, and tough-minded people are included in their ideal environment. A few of the downfalls of these types are that they overlook people's needs in their focus on the task and decide too quickly and appear impatient and domineering.

State of the Existing Data Bases

There are four databases at WPI based on class years. They range from the class of 2001, who were the seniors last year, to 2004, the freshman last year. All the databases have gaps in them, which is understandable due to sports activities during the New Student Orientation and transfer students arriving later and not being included in the Class of 2001-2004 MBTI data collection because they had a different program. If, during orientation, there was a sporting event, then the entire freshman group participating in that sport missed out on the opportunity to join their orientation groups. This is one of the main reasons why so many MBTI's are missing. Transfer students do not participate in orientation as frequently, but in this case the Office of Student Advising decided not to include them in the MBTI data collection for logistical reasons. The MBTI and CIRP would be administered right after the Math Readiness Test, but since the transfers don't take the math test they stopped giving them the rest of the testing as well. They are assigned to an orientation group, but do not show up probably because they feel that they were already a freshman once and don't think they need to go through another orientation.

The 2001 database had a lot of MBTI information. When we started the Class of 2001 database it consisted of about 542 completed forms. The class as a whole was about 670 students. We were able to gather MBTI data for about 32 of those who were missing. Further, some previous following data that had not been added to the main data set was located in the archives, though that was not our doing. We took the MBTI data set from 542 to 574, still about 100 short. In the end, with found data from prior follow-ups, the data set would stand just short of 600 cases, at 89% coverage of the original Class of 2001. This doesn't take into account the class of 2000 students "reclassified" so as to join the class of 2001 for graduation, or the Transfer students arriving in NSO from class of 2002 who were a year ahead and then joined the class. Only 57% of the original students in our MBTI database Class of

2001 graduated in may of 2001. There were well over 100 students from prior classes finishing up late, so about 550 people graduated that day. There was a striking pattern among those graduating. 70% of the SJ's that start together in August of 1997 were there to graduate in 4 years, but only 52% of the NP's. Of the 16 types, one type was 80% strong, another 40% were present.

Our following work made this striking analysis possible. We like to think we helped "save" this data set and many interesting findings will emerge from it now that it covers nearly 90% of the original class. This was one of our goals in our data capturing effort. We tried to fill as many of the gaps as possible. Most of the GCSI information was in the database along with their freshman year grades, which used to be fairly easy to obtain through the Registrar's office, though the class of 2004 project is delayed for lack of them. Freshman year all students are assigned to dorms. The information on how they were grouped together is already included in the main class of 2001 database along with CIRP and SAT data. High School transcripts were previously obtained from about 40% of the seniors. In order to view these transcripts, permission is needed from the student that says we are allowed to access them. We included an item on our survey in order to get permission from the rest who were still at WPI. The majority of the seniors we asked allowed their high school transcripts to be involved in the study, very few denied us access to them. However, only 105 returned our survey and these were not necessarily people from the 60% who had not given permission previously. We probably got about 55 new cases of seniors and then about 50% of the class have now given its permission to use HS data

As for the 2002 database, some 90% gave permission to access H.S. records, and 90% of these were added into the data set. MBTI data is included but there are gaps also due to the same reasons as above involving attendance at key meeting during orientation. SAT and GCSI data are already part of the database along with freshman year grades. IQP's were done, by Jim Moses and John Escolas, and

Jesse and Shannon which brought together many parts of the 2002 data set and for the first time used the CIRP – which Jesse and Shannon added to the data set. Both teams used SAT, CIRP, and freshman year grades in their project work. High school transcripts were also available, but only Jim and John used them. So there is not much additional information needed for the 2002 database. Jesse and Shannon focused on the MBTI – CIRP relationship while John and Jim established three variables using CIRP data- Ambition, Confidence, and Focus, and looked at how they related to HS and College performance- as well as making a few HS grades on progress to College performance prediction in general.

Freshman housing, Sophomore and Junior grades, then an MQP survey like the one we did for the Class of 2001, should make this data set complete. The stage is set for a great IQP for next year using the Class of 2002 data set. A group could take all the information gathered this year, which was a tremendous effort, and use it for many studies. All the information needed in order to have complete coverage, would be to analyze the MQP groups as we did. Obtaining information from MQP groups will be much easier for this next group, because we already tried some approaches and know what to do and what not to do.

Based on our advice, a team of 4 will fan out on project presentation day and take care of all of the survey distribution at all the poster sessions. People running the day long series of presentations will be asked to distribute surveys for the investigations. A second survey designed for people who worked alone is needed and it should be printed on another color paper. A follow-up should be done on-line, not with later efforts to pass out more paper survey forms at graduation rehearsal and other class events.

That will the time to find the people for whom the MBTI is missing – and who are graduating. Preliminary results suggest that about half of the EE majors returned a paper survey when it was

distributed by the people running their presentation sessions – 39 out of 64. The poster session distribution at ME, BBT, and CM did not fare as well, but so far there are about as many as we got, 105 or so, from the other disciplines. Hence, this year there are 144 in hand as the follow-up effort starts. This is about twice as good as our initial distribution and a little better than our final count after 3 waves of effort. Given a convenient on-line follow-up survey, we predict the Class of 2002 MQP survey study will get about 250 – or half of the students who presented on presentation day – to respond. Is that goal enough? It does mean one doesn't have whole groups responding – a problem. However, it does mean at least one person gave their perspective on most MQP groups.

The transfer students' MBTI data would still have to be collected. Perhaps this could be accomplished with some persistence, but it would be the hardest part based on our experience.

The 2003 database isn't as far along as the 2002 or 2001 data set. There is only information on the MBTI, GCSI, SAT, and freshman grades. This isn't all that bad though, as long as the MBTI information is gathered that can make for a great project. This is a data-collecting project in the making. Getting permission to look at high school transcripts along with filling the gaps in the MBTI list is what is needed to get a complete up to date list. A study next year could be done on IQP groups. The majority of the class of 2003 will be starting their IQP's next year. This study could be run the same way as an MQP study but it would just be comparing IQP groups. This would show if there is the same correlation between IQP and MQP groups.

The 2004 data set isn't very well put together yet. The only information gathered so far is the MBTI information from orientation, which contains good coverage for the class. Freshman housing data has also been obtained, while CIRP, SAT, and grades have not been collected. This would be a huge job for just one project to do. This could probably be broken up into a few different projects. From the information we obtained this year, along with the other IQP groups working on this topic, the

2004 database will definitely be complete by the time they are seniors. Since many projects have already dealt with trying to get information from students, obtaining information for the 2004 data set should be a very smooth data capturing effort.

The 2005 database is very thin. MBTI data was only collected for 55-60% of the incoming freshman. No GCSI or any other information has been collected. The databases are starting to deteriorate. This 2005 database is the worst yet. Based on these results it is unknown if the Class of 2006 will even be administered the MBTI or GCSI. The most complete databases left are the 2001 and 2002.

Project Method

The original goal of the project was to compare the transfer students to the rest of the student body by administering them the MBTI. We started with the most recent chart of transfers that had just arrived in the Fall of 2000 but were not really freshman. Typically they have done a year of college education and so while orientation was with the class of 2004, they were joining the class of 2003 or 2002. The rest of the students in their classes filled out the MBTI in their freshman orientation groups during the first few days before classes. This has been going on since August of 1997 when the class of 2001 arrived.

The MBTI, which is one common way to measure learning styles, had been administered during this orientation period for 4 years. The majority of freshmen take part in this, and in August of 1997 an attempt was made to include the Transfer students but they did not identify with "The Class of 2001 Study" and were not required to take a math readiness test or fill out the CIRP, so they did not ever gather to fill out forms. In effect their orientation leaders never made alternative plans to administer the MBTI and the follow up effort focused on the 141 people who were freshman, who started, but did not finish their MBTI survey. Thus, the transfers were skipped in the Class of 2001 study. After this experience the transfers were just ignored in August of 1998 and August of 1999 until suddenly it was noticed how serious a lapse in the data sets were developing. Studies were being done of attrition without taking into account who was arriving to make up for the losses of those leaving, then the decision was to try to find the August 2000 transfers to fill out the class of 2003 study started in August of 1999. If that went well were going to try to find the class of 2002 and 2001 transfers. The transfers who entered with the class of 2004 (in August 2000) were broken up into two orientation groups and apparently didn't attend many of the events involving data collection because there is little to no information on them.

Our main goal was to obtain MBTI data from all the transfer students entering in that year. Our team also came up with a transfer student questionnaire, which is shown in Appendix B, to help better understand where the transfers were coming from. A permission slip was given to transfers who participated in this study. This gave us permission to add their high school grades, SAT scores, and WPI course grades to the data set.

Ideas as to how to get these transfer students to take the MBTI were thought through and the conclusion was to book a room on campus, send out an email, and see how many would come and follow up with the rest. Only nine transfers show up out of a possible 45, 20% of the total. That meant 80% would need to be followed up. That was more than we were prepared to undertake. Again ideas were thought of how to best obtain MBTI's from the transfers. Ideas of doing a free pizza and soda gathering where the MBTI could be snuck in while they were hanging out were contemplated, however, we did not have a large enough budget to do that. Another thought was to hold a raffle of some sort. Something like, come take the MBTI and get entered into a raffle for a gift certificate to the campus bookstore or a portable CD player. Again the logistics of our budget or getting good donations in an adequate number ended this plan. There had to be another way.

The idea of just walking door to door and handing every transfer student an MBTI was thought of and planning for this started, but was decided it would be much too much work to find where everyone lived and email him or her and set up a time to come over. Also the thought of leaving an MBTI question booklet, which can get expensive ($3.50 each), with every one of the transfers, was not a good idea because if they didn't answer us on our first try then they probably wouldn't get back to us the second time either.

After all this time of trying to come up with a reasonable data capture method to produce the MBTI's of transfer students, the answer was not being found. The need for a pre-organized group,

such as orientation groups, that would meet on their own would hopefully get a good turnout. Looking at the problem from this angle it was decided to fill in the gaps involving people who were in organizations with us. It was noted that most of the freshman football players were missing. The majority of the orientation meetings overlap with preseason football and due to this, the freshmen of the orientation 2000 (class of 2004) were unable to take the MBTI, CIRP, and other related measures. It was very different approaching them about the problem since we knew every one of them. It then dawned on us that since we were filling in the missing link of football we would probably be obtaining complete coverage of this sports team. MBTI based theories immediately occurred to us about how team athletes would differ from the typical WPI student. Discussions of the more individual teams like track, swimming, wrestling, and tennis and more theories emerged with relative ease. Plugging holes in the teams seemed relatively easy since one could appeal to an identity with some loyalty to get them to cooperate.

It was not a long step from there to theorize about the difference between the Fraternities on campus, since particular athletes heavily populate particular fraternities, and others have different reputations. A general theory was now emerging about how various social groups appeal and take on the character of different personality types, with implications from the distribution of learning styles in various groups. Since our whole IQP group is in a fraternity we also decided that it would be very interesting to study learning styles in 2-3 fraternities also, and we were confident about being able to get cooperation from the "brothers" in these networks. Data capturing of MBTI data from all the athletic teams on campus began. There wasn't too much MBTI data missing from athletic teams other than freshman football players. For the one's that were missing we would find out when their practices finished and we would get the MBTI to them right after.

The majority of them were received probably due to the fact that we just showed up made the effort and really cared (or just seemed really desperate for their information) the success rate was good. Some people didn't want to participate in the study, which is going to happen no matter what you do, but clearly this strategy of involving groups with a single date, location, and identity was far better than trying to get an individual to participate in an MBTI study. Soon the teams were broken down by MBTI data (learning styles) and compared in several different ways. It was the same for fraternities. We could compare Sigma Phi Epsilon and FIJI the same way. The social network analysis was shaping up nicely to complement the emphasis on data capture, which had begun the project. Then our plan was simply to compare the incoming group to those in the class who started as freshmen, so the logic of the analysis had not changed much, though the data collection strategy was utterly different.

At this point a methodological problem arose. All prior projects were of a class year. By looking at campus groups that spanned the class years, a campus wide linked database had to be created and mark the participation on a team as a variable or create a separate data set for each team, or the athletes on campus as a whole. If we went for the second approach we would need a way of calculating the degree of difference between two populations involving 16 types and 4 dimensions. This is called making an SRTT (Selection Ratio Type Table) and a program to run the table existed on an old 5 ¼'' floppy disk, which gave us trouble reading and using the disk. However, the alternative was to run some 42 statistics using SPSS, and that would require an integrated database with both the base population and the specialized united. We really were not prepared to create a database of 2,400 people, just to study a few dozen athletes. The SRTT approach was more appealing, despite the practical difficulties. However, one member of the team, a late arrival, Jon Oexner, disagreed. He wanted a "general" solution to the problem of how to map the social organization of the student

networks in our student body. Oexner claimed that it was not necessary to code everyone into a master database first and then mark those few on each team; instead he would create a relational database in Microsoft Access. We would still create a master database of all students in the four classes (2000-2004) at WPI, for whom we had MBTI data, and this master database would be in the same format as the relational database in Microsoft Access. The formats of the two databases are important so we can pull queries, so the name and ID# of a student can be used to link them with the athlete database to the MBTI database. The comparing of all students to that of athletes (broken into independent and team sports) would be a manageable task, and would allow us to create any query of a similar comparative type for which a list by student name and ID# could be made in a very short amount of time.

Pressed now to consider what other groups we could compare on campus along with the athletic teams and fraternities, we came to the conclusion that studying IQP and MQP groups would be the most interesting as these were tied into academics at WPI, and most likely grew out of the social network. We were trying to figure out what different types worked with each other and also which learning styles worked best together, and found that there was considerable theory on the subjects of group dynamics based on the MBTI and GCSI already. After obtaining the already existing MBTI information, and comparing it to who was on athletic teams and also in the class 2001. We decided to only take on the MQP groups for the Class of 2001, since there were so many holes to fill. In doing so we would be helping someone else who would later reconstruct the IQP teams anyway. While trying to find the missing links in all the MQP groups, we decided that we would try to collect as much information from the class of 2001, which were the large majority of the people in MQP teams, as possible. We were going to try for as full a data capture full coverage on the class of 2001. Full coverage was going to include MBTI and GCSI information, as well as our own one page survey

about the team formation and experience of the MQP teams. On the other hand there was not going to be a full analysis of the data. We were preserving it for future groups to look at, in most cases. There was not too much cooperation as individuals were being contacted by e-mail from the seniors who pushed hard to finish their projects. So we had to think of another plan. The breakthrough of our project finally happened, when we found a listing of senior presentations, in which the time, place, and who was presenting their MQP's, for project presentation day. We later found that all departments had listings for presentations, and WPI as a whole was compiling a list of all MQP presentations, campus wide.

Since we were trying to get in contact with people in so many MQP groups we decided that Project Presentation Day was the time to get all of our missing data collection done with a personal touch. This was an all day event, where we went to buildings all over campus and found as many of the missing team members as possible. This was the best data capturing event we had done up till then. We mainly focused on getting full coverage of ME, CS, Biotech and the Management departments, since there were only four of us in the group. Instead of getting to every building and getting about half coverage of every major, a focus would produce a better data set. Aerospace and Mechanical Engineering were especially important since a parallel study was being conducted at BU of those two majors. The majors were Mechanical Engineering, Computer Science, Biology, and Management, in part due to our contacts, in part due to a desire for type grouping, and in part due to convenience. We utilized the early morning to get organized and it was easier to find people in a room all in one hour, rather than going around randomly to different presentations. By organizing the distribution of our questionnaire into times they were not too busy, we were not disruptive during the presentations.

By taking this approach we accomplished a lot of distribution work, but that did not mean the information we needed to conduct a thorough analysis would be returned by all the MQP team members. The MBTI, the GCSI returns were slow but steady. But things were far worse for the people we did not see in person that day because their presentations were early, off schedule, or just in an inconvenient location. The mailing to these people's campus mailboxes were accompanied by e-mails. Two weeks later, when their mailboxes were closed, the postal service returned 17 of them to us that were never picked up by these students. We then re-contacted these 17 people via e-mail, and very few responded. A few cooperated fully by forwarding a new e-mail address. Some even stopped by to pick up the materials. Further focusing our attention we identified the people in ME who we needed to fill out our MQP questionnaire, and those who we needed to fill out our MQP questionnaire to complete the coverage of an MQP group. There were 14 missing and we wanted 10 of them to give us 8 more complete groups. These surveys were only given to the students who we needed to fill gaps for. More information on group dynamics was needed. We decided that information dealing with the level of conflict in the group, and how the group met would be ideal. So a questionnaire was made with questions pertaining to how well one's MQP team worked together. The final question on the questionnaire dealt with whether or not they gave us permission to have their high school grades added to the data set. This was going to be used for future analysis, not included with our IQP. If we could not find missing members to MQP groups, we mailed the whole package with one of our surveys included, to their campus mailboxes. Professor Wilkes was eager to do a study of how the cognitive mix in, GCSI terms, affects performance but our group chose to study cognitive clustering in terms of the MBTI. Also it was cared who made up the team – in theory, friendship groups will form the basis, so type alike teams will form. Wilkes thought that the structured or ill-structured project goal on hand would determine who was attracted to it.

The resulting questionnaire covered topics such as whether teammates were friend's first, the role of the advisor, the types of contributions different people made to the team effort, levels of conflict and ease of agreement, how well they thought they did, and whether we could access their high school transcripts. Wilkes then agreed to devise a survey for the advisor focusing on his issues of performance, but also getting into conflict, cooperation, innovation and the origin of the problem and the team. These would go out over the summer, and eventually data on 30 projects were obtained from the advisors. It proved to be the case that those projects which "exceeded expectations" were the ones with bothe qualities measured by the GCSI. Unfortunately our project had focused on ME, and the advisor responses tended to be from other departments. However, survey forms and distribution strategies for both advisors and students on MQP's were developed and piloted on the Class of 2001. They would be revised and refined and used again a year later for the Class of 2002 study.

To further help in the completion of our project Professor Wilkes brought in Jon Oexner in to help us out. He was doing his IQP on the class of 2001, which involved creating a database integrating every aspect of data set for the class of 2001. We created a database with our MQP questionnaires administered and passed it over to Oexner. This will later be used for analysis if we get enough of them to cover our four majors with at least two responses per team.

The final aspect of our project involved combining our efforts with Dr. Morton Issacson of Boston University to compare the Aerospace and Mechanical Engineering design projects at BU and WPI for the Class of 2001. Morton Isaacson runs the senior ME design class at BU. His problem was that he promised the human subjects committee that no one involved in grading the students would handle the gathering of data on the teams. So he had 12 missing people and no way to track them down. The deal was that we would attend their project presentation day, which was on May 3, 2001, and collect data using our own group dynamics survey. The deal is, is that if we attended presentation

day and found group members who are missing the MBTI and/or GCSI and had them take them, the BU department will find someone to do the analysis of the BU and WPI ME/Aero data. Our project was strictly data capturing for the ME side of the Team Dynamics study. We would report only on our own survey and the MBTI mix that resulted if we had the time. The collection of our survey data was successful, as was Prof. Wilkes' appearance during the rehearsal for their presentation, at which he collected GCSI data and distributed MBTI's. Unfortunately, the MBTI's were rarely returned, so the BU data was valuable to the GCSI study, but not to ours.

Project Problems

There were many bumps in our project. Since this was the first group to look at social clusters, there was no previous successful models of the best ways of gathering all our information needed. When our team first started to study the transfer students, it was unsure of how to obtain the information from them. It was then tried to bring them all together, but that didn't work out well at all. Sending messages by way of email is a useless approach, because as soon as a student checks their email and notices that someone needs help with an IQP, the message gets deleted. This is known because everyone has done that at some point throughout his or her college career. After much worrying about how to get the transfer student information, we were planning on going from door to door for every one of the transfers. This would have been a huge and almost unsustainable effort, so instead of doing this, we just dropped the transfer study project and began a study of other social groupings, athletic teams, fraternities, and MQP groups, with a known social structure and more predictable existence in time and space.

This was a much more manageable project, since our group was involved in athletics and the fraternity system and know our way around there social structure. But even though we were now starting a project, which we knew we could get information on, we had already spent a term and a half on the transfer study. This new study was going to have to be accomplished in half the time an IQP usually takes, so that was more added pressure. Information on almost all the athletic teams and fraternities was obtained fairly easily, since we knew many of the people that were involved. The MQP groups were a different story. Time was running out to get information on the seniors. They were finishing their final term and getting their future jobs lined up while we were going to attempt to get some information from them.

We found out that it is very tough to get the seniors to cooperate with us, since they aren't worrying about school anymore, but after describing what our project entailed they were usually willing to help us out in principle. Follow-ups were another matter. We were wondering how we were going to get the information to help with our MQP group study. Luckily it was remembered that MQP presentation day was only a day away. So the night before was spent running around getting everything ready to hand out at presentation day. The outcome was getting to the presentations an hour late due to printing up copies of our survey. This came back to haunt us, because just about the only MQP groups that were completely missing were the early groups. Our group split up and went to the various buildings, really focusing our attention on the Management, Biology, Mechanical Engineering, and Computer Science departments. Excellent results were returned from those with time to do it on the spot since the survey only took about a minute to fill out. The missing MBTI's were handed out hoping that the student would cooperate and return the completed one's back. This didn't go as well as we had hoped, but we did get some back, which was encouraging.

The end of school was now growing closer, and the seniors were now going to become less and less cooperative. Packets, which included the MBTI and our survey, were sent out to the seniors who we were still missing information on. About 4 or 5 MBTI results were mailed back to us, but when the school mail boxes closed down, overall, 23 packets were returned back to us because they were never even picked up. That wasn't a very good response mailing wise. The best approach by far was talking to them in person and describing what was going on. When this was done, a much higher percentage of MBTI's were returned completed. When they were mailed the response was very low, only a few were completed, so this would not be a good approach to take in the future.

As our project expanded throughout the year, it was decided to take on a comparison study between the Mechanical Engineering departments of WPI and BU. This part of the project was not

different, but it was a time consuming distribution as it involved a whole day of listening to project presentations at BU. This was part of the agreement we made with the ME staff at BU. Since they were the one's doing the grading and listening to the presentations, they needed someone to be in the room after the presentation finished to hand out the surveys and MBTI's, this responsibility was given to our group. It was described to each group what our study was going to cover and then our survey was handed to each member and if some of the members hadn't taken the MBTI that was also given to them to be returned as soon as possible.

Project Findings

WPI Woman's Individual Sports vs. Teams Sports

Looking at the graphs of the WPI women athletes, we know that more athletes are Extraverts as opposed to Introverts. This is typical for the general population as well, but not to general WPI student body. We chose to take a look at the comparison between team and individual athletes as well. It is our feeling that it different types of people are attributed to competion in team sports and individual sports. The teams that we looked at for teams sports were field hockey, soccer, crew, and basketball and the individuals sports were swimming, tennis, and cross country.

The MBTI measure was again used to relate athletes to their learning styles and look for any comparisons between teams and individual athletes. We chose to look at the athletes through four categories: NJ (intuitive perception with judgment), NP (intuitive perception with dominant perception), SJ (sensing perception with judgment), and SP (sensing perception with dominant perception). Seventy-six athletes competed in team sports and the breakdown is as follows: 16 were NJ, 17 were NP, 23 were SJ, and finally 20 were SP. There are 33 N and 43 S in a student body where S is the minority. This shows that more team players lean towards a sensing perception and judging. These woman athletes tend to like using experience and standard ways to solve problems and work best when they can plan their work and follow their plan. When woman athletes' play for a team, they need to have to plan for a certain team and must execute. If you don't, they will have to go back to the drawing board and plan everything over again. This is when the SJ and SP personalities shine the brightest. Thirty athletes competed in individual sports and the breakdown is as follows: 6 were NJ, 10 were NP, 9 were SJ, and 5 were SP. This shows that there is no clear type for the individual athletes. They are both intuitive and perceptive, and sensing and judging. This means that woman

individual athletes are as likely to have one personality preference as the other and there is no clear separation between them.

WPI to BU comparison of ME students

The MBTI analyses different types of people and we wanted to see whether our ME department compared to that of BU. Gathering all the information from BU was not going to be easy and we knew this ahead of time, but we knew the importance this aspect, as our school has presentations for our MQP's, BU does as well. We felt that this would be a perfect opportunity to gather all the information for the BU students.

There was a large number of missing MBTI's from the BU students and that was our major concern. If just one person was missing from a group, it made the whole group no good. We successfully filled most of the gaps before the presentation day. This was a good start, but in order to get the remaining people, we felt that delivering the material first hand was the best idea. We spent an entire day at BU's Photonics Building listening to presentations concerning mechanical and aerospace engineering. We handed out the remaining MBTI's after each presentation by going up to the students individually and asking them to fill it out. For the most part the students were really cooperative and were interested in helping us when they saw us, but the MBTI results rarely come back to us.

Another part of out study was the group dynamics. We successfully got many of our surveys completed. To our surprise, the BU students wanted to know more about the details of our project. They were interested in how we were going the use their information in our study. We enjoyed talking to them about our project. This was a large help in getting their cooperation and will make comparing the two schools a much better study. The study of the MBTI's and group dynamics of WPI MQP's and BU Projects isn't going to be performed by us, our role at BU was data capture, to make a comparative study possible.

Arriving on rehearsal day, Professor Wilkes got most of the GCSI data (missing one team of 3 and 2 individuals from Aerospace teams.) He distributed the MBTI's to be brought to us 2 days later

on Presentation Day. The missing team presented first and agreed to participate after that. We got 90% of people to fill out our survey, and the 2 Aerospace students took packets of materials and promised to mail them back to us. However, only one person showed up with the MBTI filled out. They were all contacted later by e-mail, but that part of the study failed to produce any MBTI results. Still, out of some 50 people only 2 refused to participate and the GCSI data set is quite complete.

WPI Men's Individual Sports vs. Teams Sports

Looking at the graph of WPI athletics as a whole, we see that out of the 246 athletes that filled out the MBTI indicator, 131 are extraverts and 115 are introverts. This shows that more athletes are oriented to the outer world, focused on people and things but the world of sports has outlets for all types. Theoretically, Extraverted people use trial and error with confidence and scan the environment for stimulation. On the other hand, Introverted people are oriented to the inner world, and rely on inner impressions. They are reflective, and think deeply before acting, finally they find stimulation inwardly that is within themselves. The traits of Extraverting people make them more likely to play team oriented sports as opposed to the Introverting people who would likely excel at individual sports with some exceptions for certain team positions.

The men's sports at WPI were broken down into two different categories, the individual sports (wrestling, cross-country, tennis, swimming) and the team sports (basketball, soccer, football, crew). Athletes playing individual sports are said to possess the qualities of inner strength and concentration, while athletes who play team must be able to cooperate in order to achieve success. The MBTI was used again to describe the athletes and their psychological type. There are four MBTI based "learning style" categories that seem to matter at WPI in terms of academic performance: NJ (intuitive judgment), NP (intuitive perception), SJ (sensing, judgment), and SP (sensing perception). Out of the 90 athletes in team sports, 8 learned in a NJ way (9%), 30 in an NP way (33%), 25 in an SJ way (28%) and 27 in a SP way (30%) A ratio of 1: 3.8: 3.1: 3.7. This is fairly balanced except for the number of NJ's. The NJ's are common at WPI, they use their memory and associate things, they see patterns and meanings, and they look for possibilities. In general such people read in between the lines, imagine and look for the big picture, they have hunches, and "let their mind tell the eyes". Out of the 60 individual athletes, 9 are NJ (15%), 26 NP (43%), 9 SJ (15%), and 16 SP (27%) A ratio of 1: 2.8: 1:

1.1. This study also shows that the majority of individual sport players learn in an NP way like most team players do. The majority of the NP is of type ENTP, which is rare in the entire WPI data set, but not among athletics. Also from both graphs we can see that the next most common way most team and individual players learn is using the SP way, they prefer sensing perception. Hence, we can conclude that most athletes, both individual and team players prefer NP and SP gathering data, taking it all into following a pre-established plan. They are contingent, reactive and hence has predictable. This makes sense given that they are the more successful and fluid athletes, aware of strategy and the physical limitation of the situation.

Sigma Phi Epsilon and Phi Gamma Delta (Fiji) Comparison

After obtaining all the needed MBTI information from Sigma Phi Epsilon and Fiji a closer look can now be taken at how they compare to each other and the general student body. As you look at the following figures you can see that the modal preference in both Sigma Phi Epsilon and Fiji, is ENTP. This makes sense, since ENTP's are idea people focused on possibilities but it is not enough just to see it, they have to see the idea realized tangibly in the real world. That could be one of the reasons they decided to go to an engineering school with a hands on approach for learning. They are energized by others, which makes sense since these people live a fraternity life and also the majority of Sigma Phi Epsilon plays football, which is a very large team sport.

The majority of the brothers in Sigma Phi Epsilon are football players, and ENTP is a very popular psychological type on the football team. The ENTP count is high in Fiji, because the majority of brothers in their house played football during high school though they are not the WPI Varsity. So overall they are very similar in the ENTP category. The most obvious statistic is that of the Extravert count in Sigma Phi Epsilon. There are only 9 Introverts who are brothers of Sigma Phi Epsilon, compared to 29 Extroverts. This is a huge difference, but once again makes sense, because the majority of the fraternity, are football players, who are mostly Extraverts.

Fiji has a broader range of people than Sigma Phi Epsilon. Sigma Phi Epsilon has every Extraverted type covered while only having four out of the eight Introverted types covered. Fiji on the other hand has an even six Extraverted types and six Introverted types. Overall Sigma Phi Epsilon has a smaller range of people. We noted that the majority of football players join this fraternity and dominate- with 65% on the team the year of this study. Fiji has a broader group of athletic people that aren't known for any one sport. There is a mix of basketball players and baseball players. There are non-athletes there too but they seem to display the same personality traits as the typical athlete.

Hence, the results did not surprise us too much. This homes relate well, and serve a given type of standard that is a minority group on the WPI campus.

Varsity Team Sport Comparison

A comparison of the data sets of the female and male athletes currently attending WPI yielded interesting information. The majority of the individuals, in both data sets, are extraverts. This is probably due to the nature of competitive team athletes, and how they tend to be more inclined to direct action and energized, rather than distracted, by the crowd. While extraverts dominated both the male and female groups, there is a considerably larger percentage of ESTP and ENTP individuals in male sports than in female sports. The majority of the female athletes are comprised of ENFP, ESTJ, and INTJ, which are relatively rare in the male athletic distribution.

These groupings are a representative cross-section of what type of men and women decide to play varsity sports at WPI. The majority of men playing sports tend to be extraverts and of the TP combination. Women in athletics tend to be Extraverts also, but there is a far more diverse distribution of learning styles in other respects, probably because only one in five WPI students are female, and to fill all the team slots a higher proportion of the woman need to be recruited and trained to play the game.

Fraternity Life and the Support a Member Gains

Being members of the same fraternity we have become very familiar with each other and have become accustomed to seeing, talking, and hanging out together on a daily basis. It is very rare that I do not see all the brothers who live in the house; every brother eats lunch and dinner together in one room. It feels a little strange when school is on break because all brothers are used to living with about 65 friends, and when they all go home we realize ~~who~~ how special the fraternity life is. Most cannot wait to return to school, not for classes, but because they cannot wait to see and interact with their brothers. Once it is time for the graduating seniors to leave they wish they could stay, but all realize that the seniors must move on and the said good byes are said. Although the seniors leave the fraternity the fraternity does not leave them, they cherish the experience for the rest of their lives.

How did the people who join the fraternity come to choose the particular one they did? Most fraternity houses have a well-known image among the student body and it does not take long for the incoming freshmen to find out where they feel most comfortable. Athletics play a huge role in some houses. For example the WPI campus has a football house, wrestling house, basketball house, and a rugby house, most people who play these sports join the respected houses. This is because they already know most of the members of the houses and they feel comfortable being with them, after all they practice with the brothers every day. Knowing the brothers previous to rush, the new freshmen might have already made up their mind as to where they are going to pledge and in most cases wont even bother rushing other houses. Our case is an excellent example of this. The four of us are members of the WPI varsity football team. When we first arrived on campus, 7 days before the rest of the student body, the only people for us to socialize with the football players, and 90% of the football team belonged to one fraternity. So when the other freshmen arrived the freshmen football players were aquatinted with each other, as well as with the brothers on the football team. Because freshmen

football players are already friends with the brothers who are on the football team, the place where they felt most comfortable was the football house. 75% of the freshmen football players did not rush any other houses on campus because they felt extremely comfortable with and already started friendships with the brothers. Other freshmen that arrived with the rest of the incoming freshmen must go through the more traditional way of rushing which consist of going to each house until the particular person found a fraternity where they fell comfortable and the brothers of that have similar interests the freshmen.

This process again raises the question do birds of the feather, flock together? Do people of the same style choose the same fraternity? In our study two fraternities were chosen to look at; Sigma Phi Epsilon (the football house) and FIJI (the basketball house). Looking at Sigma Phi Epsilon we see that almost 60% are extravert. It is a majority, which shows that a specific type of person is drawn to Sigma Phi Epsilon. Looking at FIJI we can see that it is the exact opposite with 60% of the brothers being introverts. Again it is the majority of the brothers in the fraternity, showing that a specific type of person is drawn to FIJI.

Freshmen rely on the brothers of the specific house they join to help them in their time of need. Freshmen grades drop after A term and the support these freshmen gain from the brothers is priceless. Brothers tell the freshmen not to worry because this happens to everyone and it will be ok. Freshmen who do not belong to a fraternity do not gain any support will not have the comfortable feeling that everything is going to be ok like the fraternity members.

The WPI Student Body Comparison

MBTI data was collected from the student body resulting in a set that includes the large majority of full time students that attended WPI during the 2001-2002 academic years. This data is compared to those students who chose to involve themselves in the various activities.

The Student Body of WPI is comprised of primarily Introverted individuals, but that is not the case for the students in the various sports and clubs offered at WPI. Fifty-eight percent of the individuals at WPI are introverts. Another intriguing aspect of the data set is that IP and IJ introverts comprise 43 percent of the student body. The student body is a very differently mixed group than the sample sets of those students who play varsity sports and join fraternities. From this data it is fair to conclude that certain types of students will automatically gravitate towards each other into these social groups.

Student Body compared to the Student Athletes

The student athletes at WPI are comprised of a far different mix of MBTI learning styles than the average of the student body. Better than 53 percent of the student athletes are Extraverts. Further, specific groups of student athletes display drastically different clustering's of learning styles than the average of the student body.

The most strikingly divergent sample set of athletes compared to the student body is the football team. The student athletes who comprised the 2001 football team were over 72 % Extraverts. This is almost twice as many as the average of the WPI student body, which is only 41%. This data clearly displays that a minority type of student at WPI, based on the MBTI, learning style, plays with the varsity football team. They would not be and unusual group in the general population, but are at WPI.

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Those students who are female varsity athletes show a similar, although less drastically different distribution. Over 47% of the female athletes are Extraverts. This is approximately 7% higher than the average at WPI; however, it still clearly shows that the athletes have a different distribution of learning styles than the rest of the student body at WPI. The four different Introvert types are INTP, ISTP. INTJ and ISTJ

Student Body compared Fraternal Institutions

The brothers of Sigma Phi Epsilon, during the 2001 – 2002 academic years, also had a drastically different distribution of learning styles than the rest of the student body at WPI. Just fewer than 74% of the brothers are Extraverts, this is the highest proportion of E's in any specialized group that we studied. Freshman students are exposed to almost every possible social grouping of students in the several months before the opportunity to rush fraternities takes place. These students gravitate to one fraternal organization over another based whether they feel comfortable with the individuals of the fraternity. This is the basis of the "Birds of a feather" theory, and the Fraternity distributions are the ultimate test of it.

WPI Class of 2002 vs. 2003 Freshman year Grades by MBTI

The comparison of the freshman grades is broken down into four different categories: SJ, NJ, NP and SP. All the grades from terms A, B, C, and D were included in the comparison. The scale is based on a 3 point grading scale.

The first comparison is that of the NP students. Both the class of 2002 and 2003 grades start off around at B average in A-term. This is the best out of all 4 terms. This may be because it is a learning adjustment for the incoming freshman and they work especially hard this term to get off on the right foot. In B-term, the effort is still there but the marks seem to fall. The Class of 2002 drops about .2 points and the Class of 2003 drops .1 points. The sign of a good student is that which can overcome adversity and prosper. The Class of 2002 recovers slightly and gains about .1 points while the Class of 2003 again declines about .1 points. Though the Class of 2002 recovered in C-term and the Class of 2003 still declined, the Class of 2003 finished up their freshman by improving slightly, while the Class of 2002 dropped again.

Next, the comparison of the SP students. The Class of 2003 starts with a GPA of about 1.9, while the Class of 2002 starts out at about at GPA of 1.55. B-term was a disaster for the SP students of the Class of 2003. Their GPA fell to 1.95, almost a .3 point drop, whereas the Class off 2002 dipped around .1 points. The SP students of the Class of 2003 definitely lost the focus that they had during A-term. It seems that they may have become too passive in their study habits and the next two terms will determine that type of class they are. In the following two terms, both the Class of 2002 and 2003 improve significantly. It seems as though the first two terms were a learning experience for both classes. The Class of 2002 improved about .2 points to a GPA of 1.65, which is the highest of any term for them. The Class of 2003 also gained about .2 points bringing their GPA to about 1.87, just slightly lower than they the GPA of 1.9 that they started out at.

Next, the comparison of the NJ students. The Class of 2002 started out at a very respectable GPA of 1.95 and the Class of 2003 started out at 1.75. Both classes declined slightly in B-term, but the Class of 2002 seems to learn its lesson and improved to at GPA of 1.92, whereas the Class of 2003 declined again to a GPA of 1.68. D-term was the worst term of the Class of 2002, where they declined about .1 point to at GPA of 1.84. Seems as though the Class of 2002 tends to relax for a term after they have a good academic term. The Class of 2003 remained the same from their GPA of 1.68 from C-term. The Class of 2003 never recovered to their marks in A-term. This shows that the NJ type from the Class of 2003 doesn't have that initiative to make them better as the academic year goes on.

The final comparison is that of the SJ students. This is definitely the best of the classifications. Both the Class of 2002 and 2003 started off on the right foot, with the Class of 2002 having a GPA of 2.1 and the Class of 2003 having a GPA of 1.84. The Class of 2002 takes the typically B-term drop to about a 1.92 GPA, but the Class of 2003 is the only group that improves in B-term to a GPA of 1.86. The SJ type of the Class of 2003 seems as though they don't get content with what they have done and strive on doing better. In C-term, the Class of 2002 recovers from their B-term slip and improves to a GPA of 2.0. The SJ type for the Class of 2003 is definitely different than most because all the other types have seemed to recover after a bad B-term, but this class declines about .05 points in C-term. Finally in D-term, the Class of 2002 slips slightly to a GPA of 1.75 and the Class of 2003 goes back up the their GPA of 1.84.

From the information above, it seems as though B-term is the worst term for both classes. College can definitely be a huge learning experience when you first start out, but the adjustment is not an easy one. This may be why there is such a drop off in B-term. For the most part, people that come to this school have to intelligence to success, if it just a matter of putting a full year's worth of hard

work into it. This is definitely not an easy task to keep high marks for a full year, but certain types seem to be better at it than others.

MBTI Distribution for Fiji Brothers: Extraverts vs. Introverts

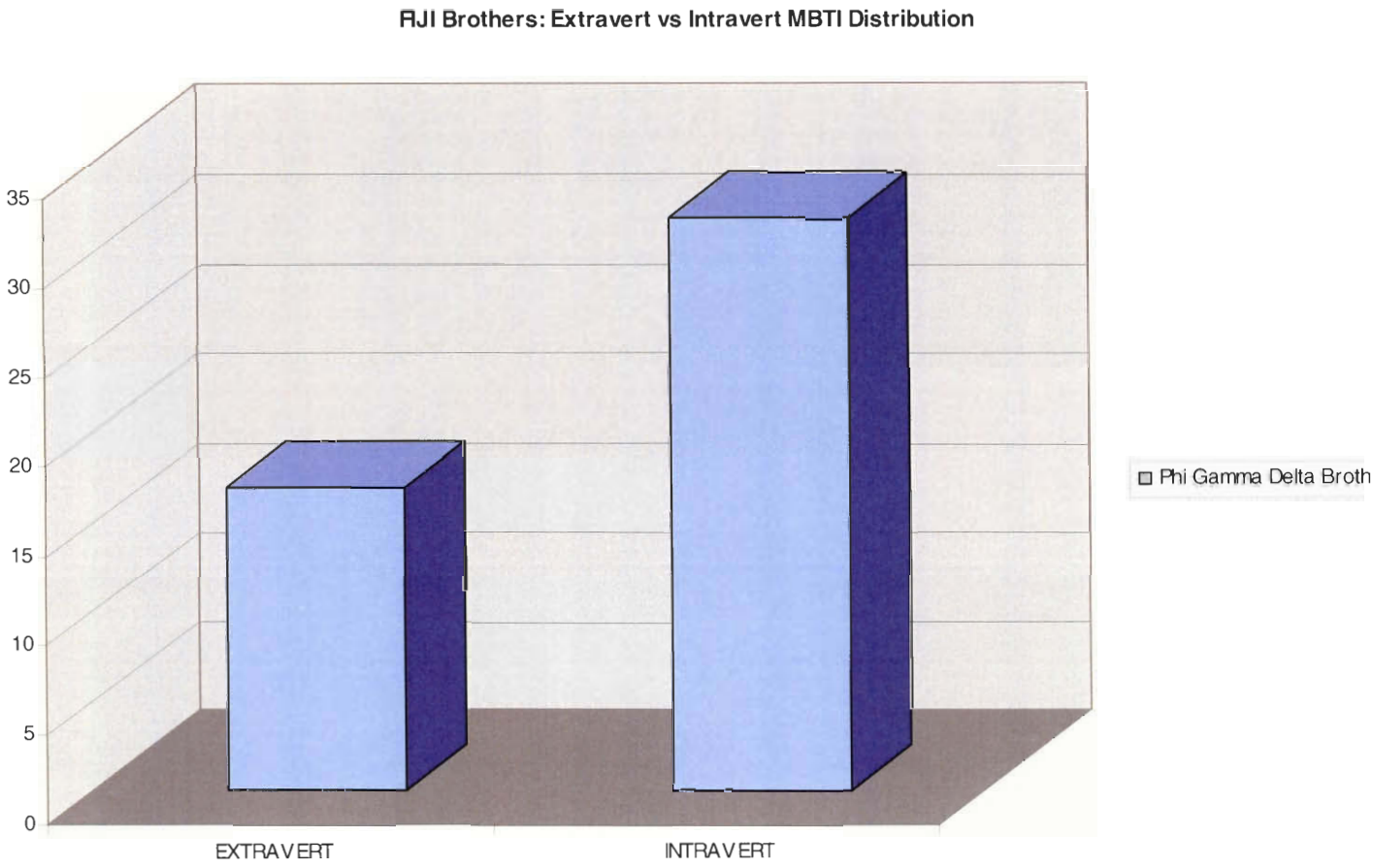

Figure 8 - FIJI Brothers: E vs. I MBTI Distribution

MBTI Distribution for Fiji Brothers: MBTI Distribution (NP, NJ, SP, SJ)

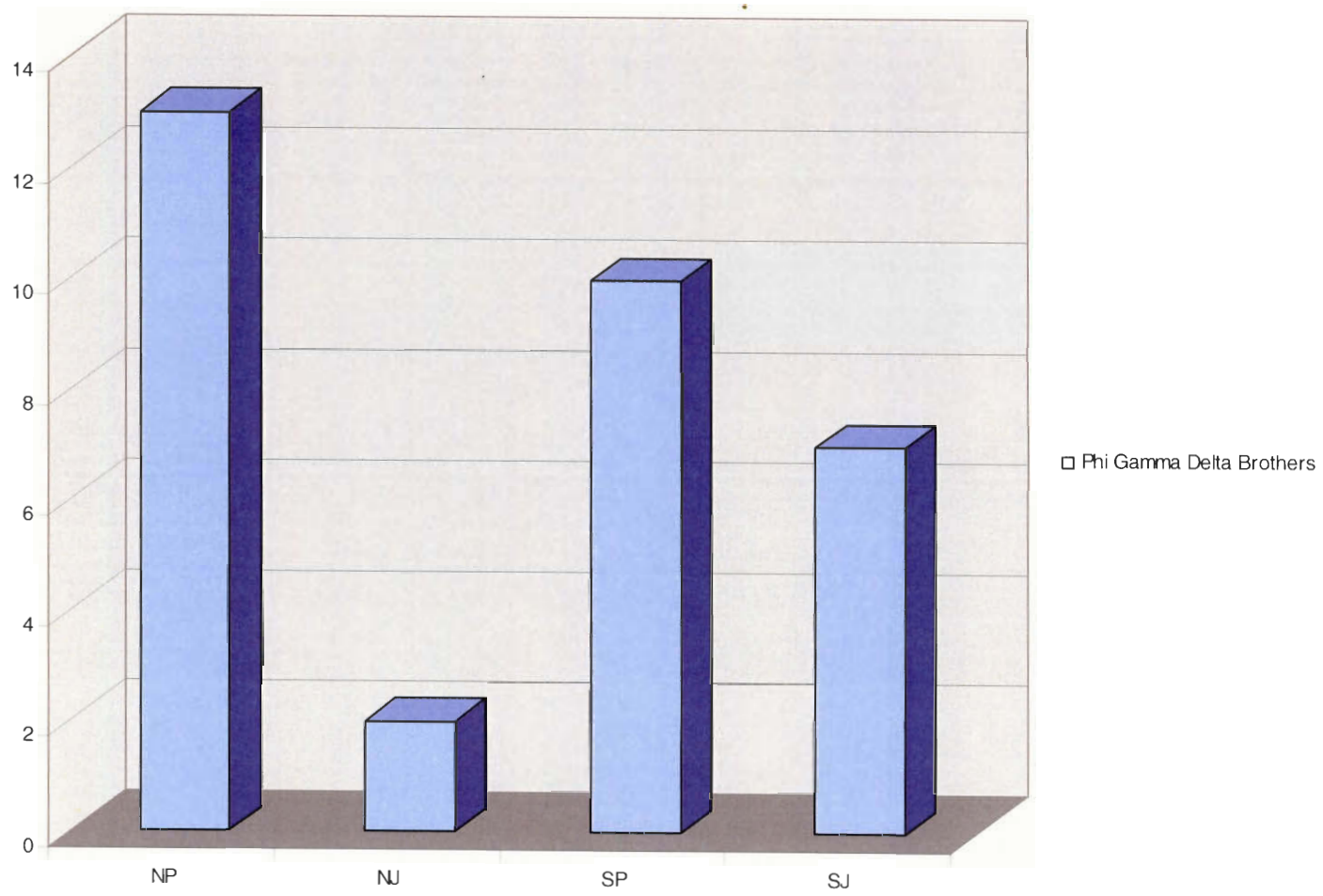

Figure 9 - Phi Gamma Delta Brothers: MBTI Distribution (NP, NJ, SP, SJ)

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MBTI Distribution for Sigma Phi Epsilon Brothers: MBTI Distribution of Intraverts vs Extraverts

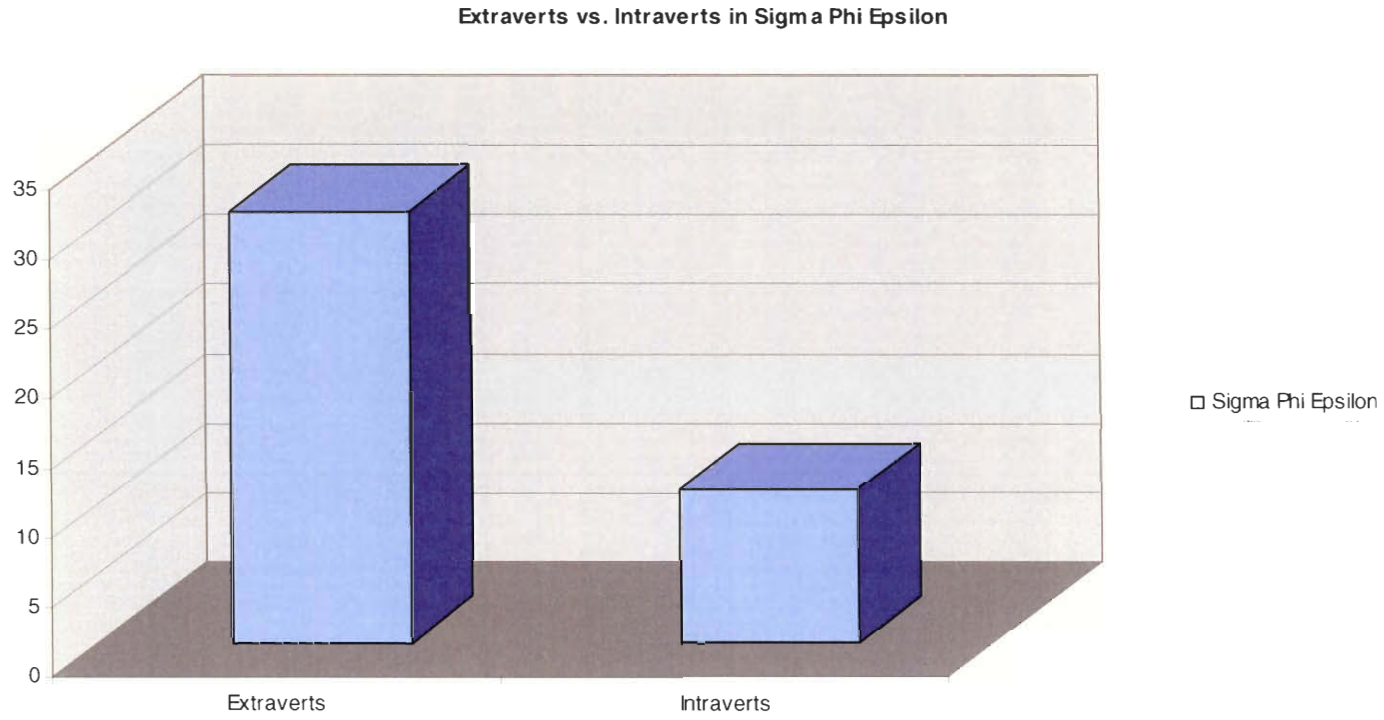


Figure 10 - E vs. I in Sigma Phi Epsilon

MBTI Distribution for Sigma Phi Epsilon Brothers

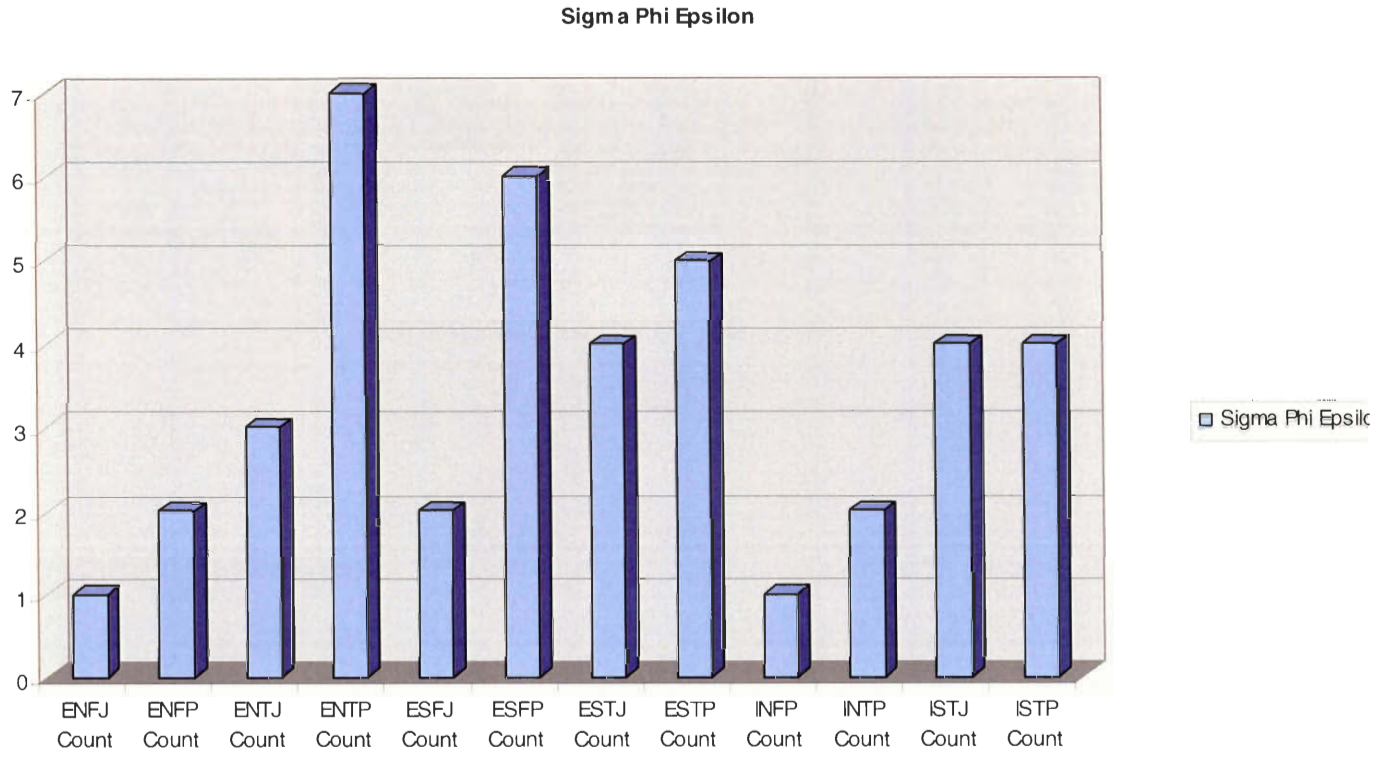


Figure 11 - Sigma Phi Epsilon

MBTI Distribution for Sigma Phi Epsilon Brothers: Senior Football Players

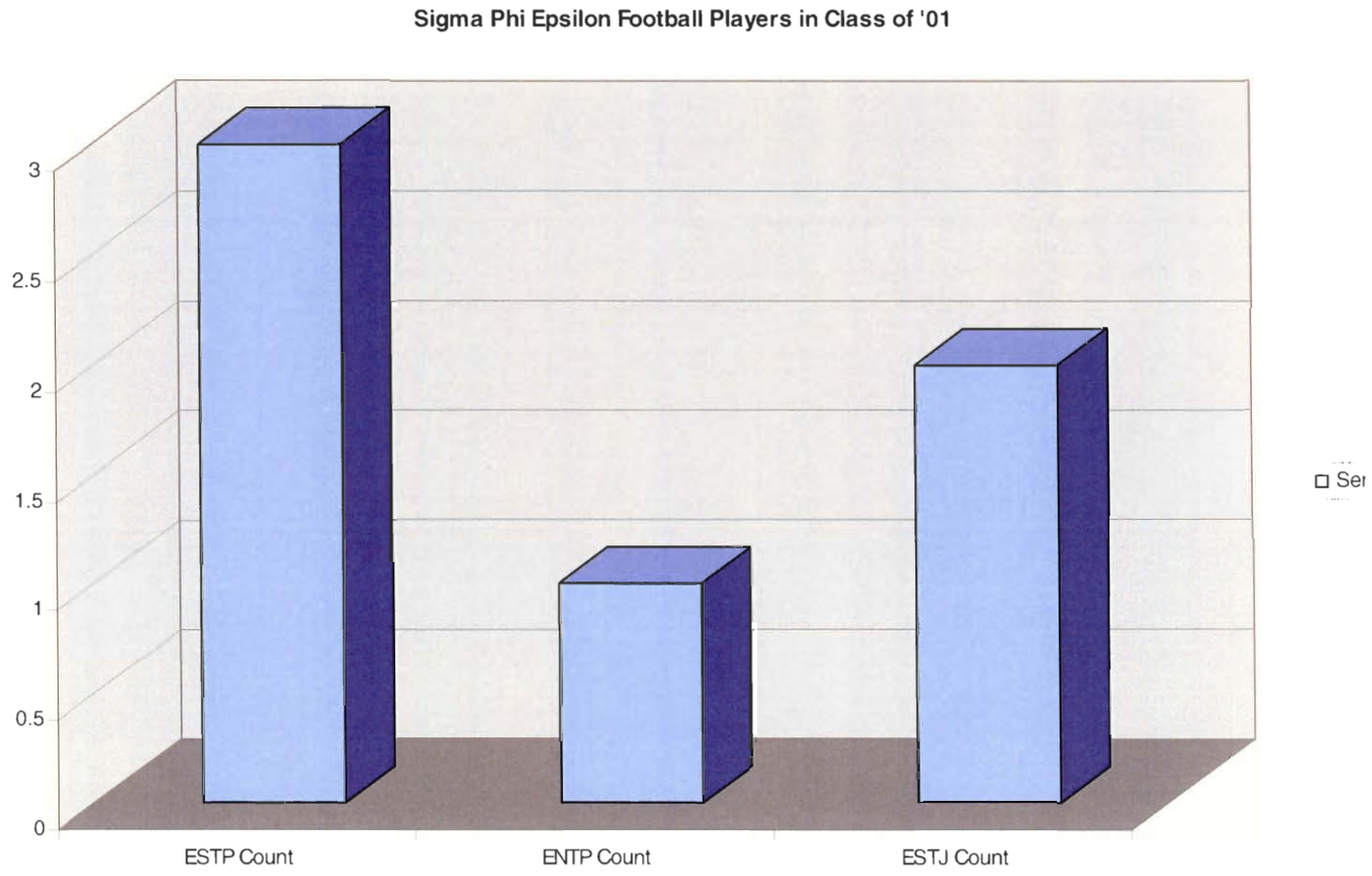


Figure 12 - Sigma Phi Epsilon FB Players in Class of 2001

MBTI Distribution for Athletes

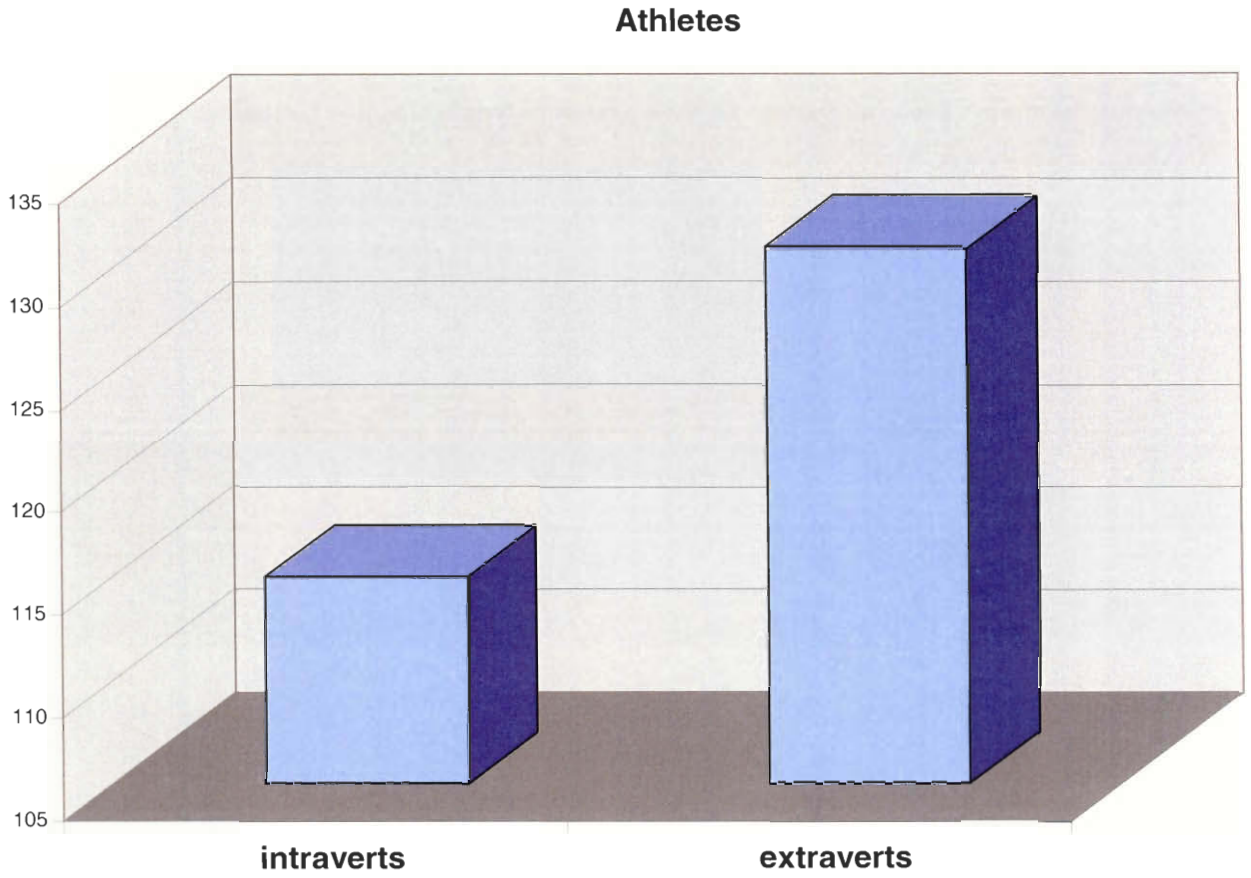


Figure 13 - Athletes

MBTI Distribution for Female Varsity Athletes involved individual sports

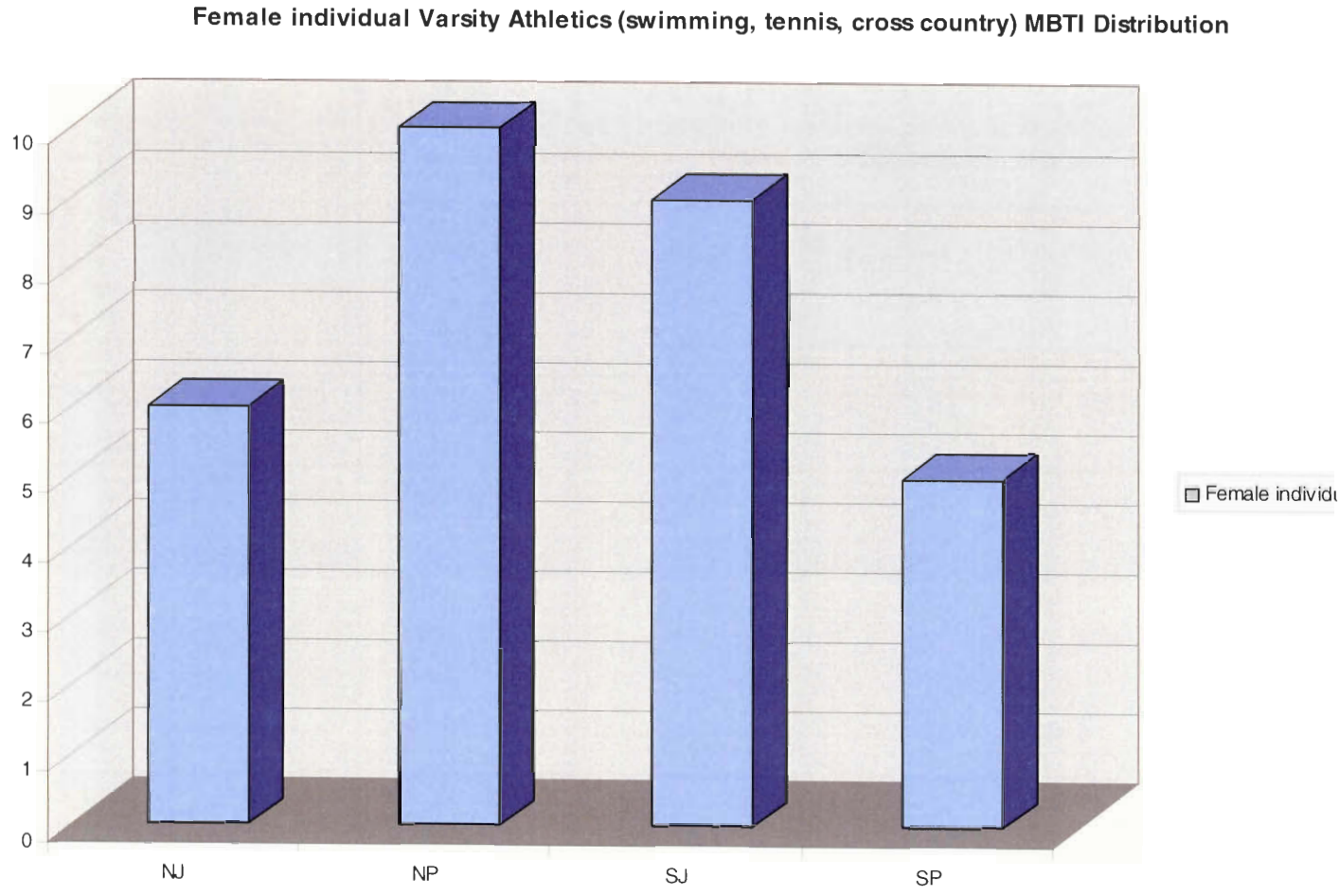
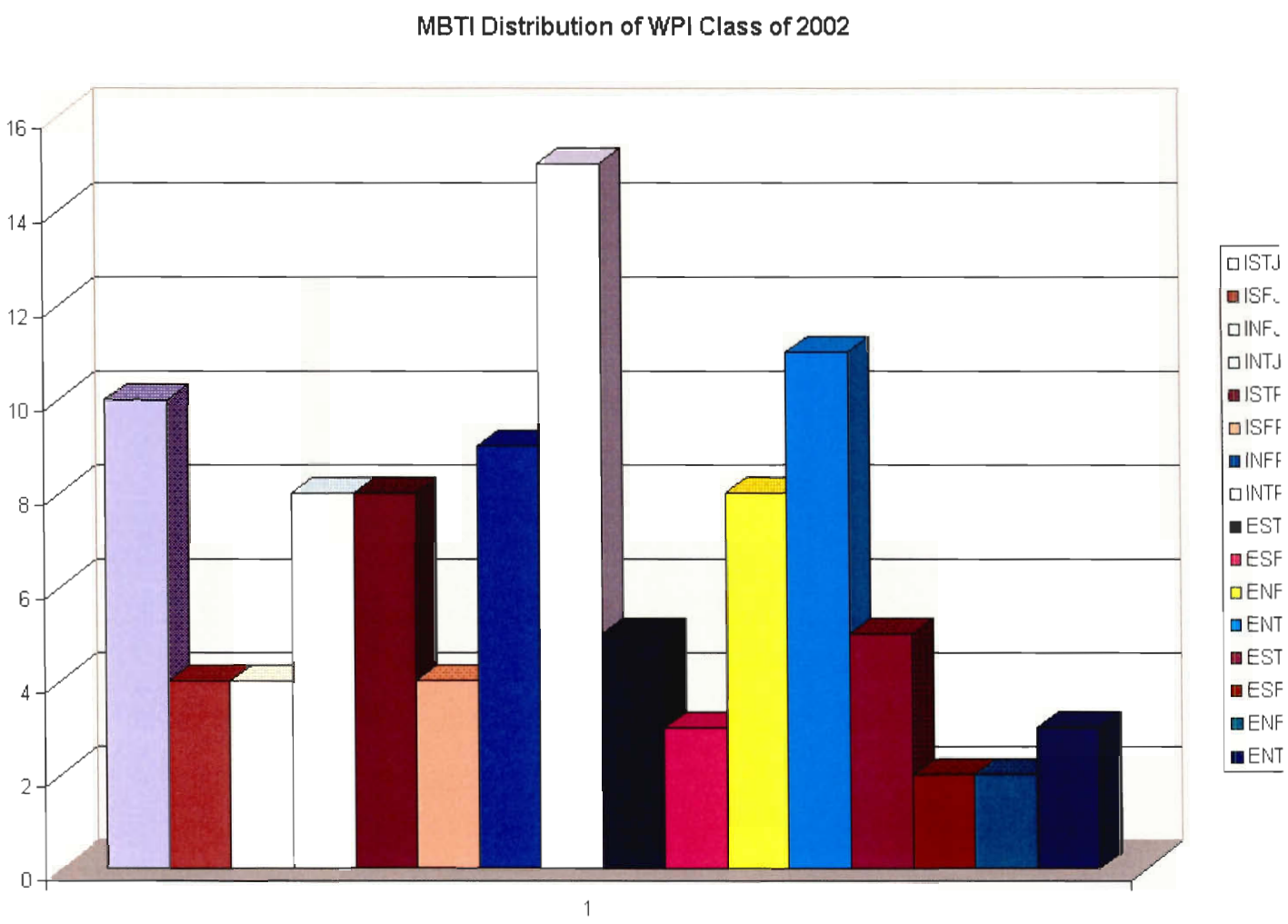


Figure 14 - Female Varsity Athletes


MBTI Distribution of WPI Class of 2002
16
14
12
10
8
6
4
2
0
1
ISTJ
ISF
INF
INTJ
ISTF
ISFF
INFF
INTF
EST
ESF
ENF
ENT
EST
ESF
ENF
ENT

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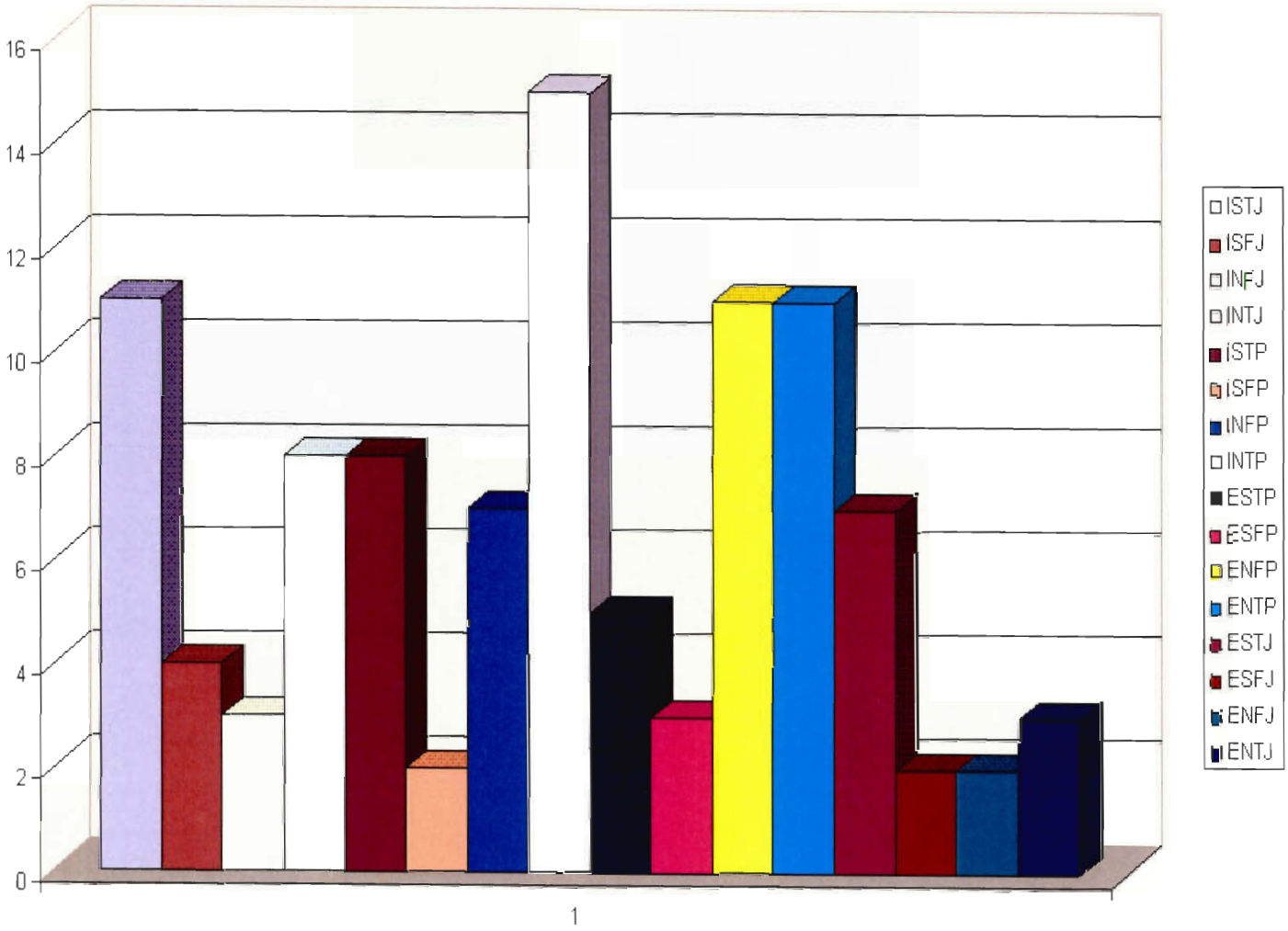
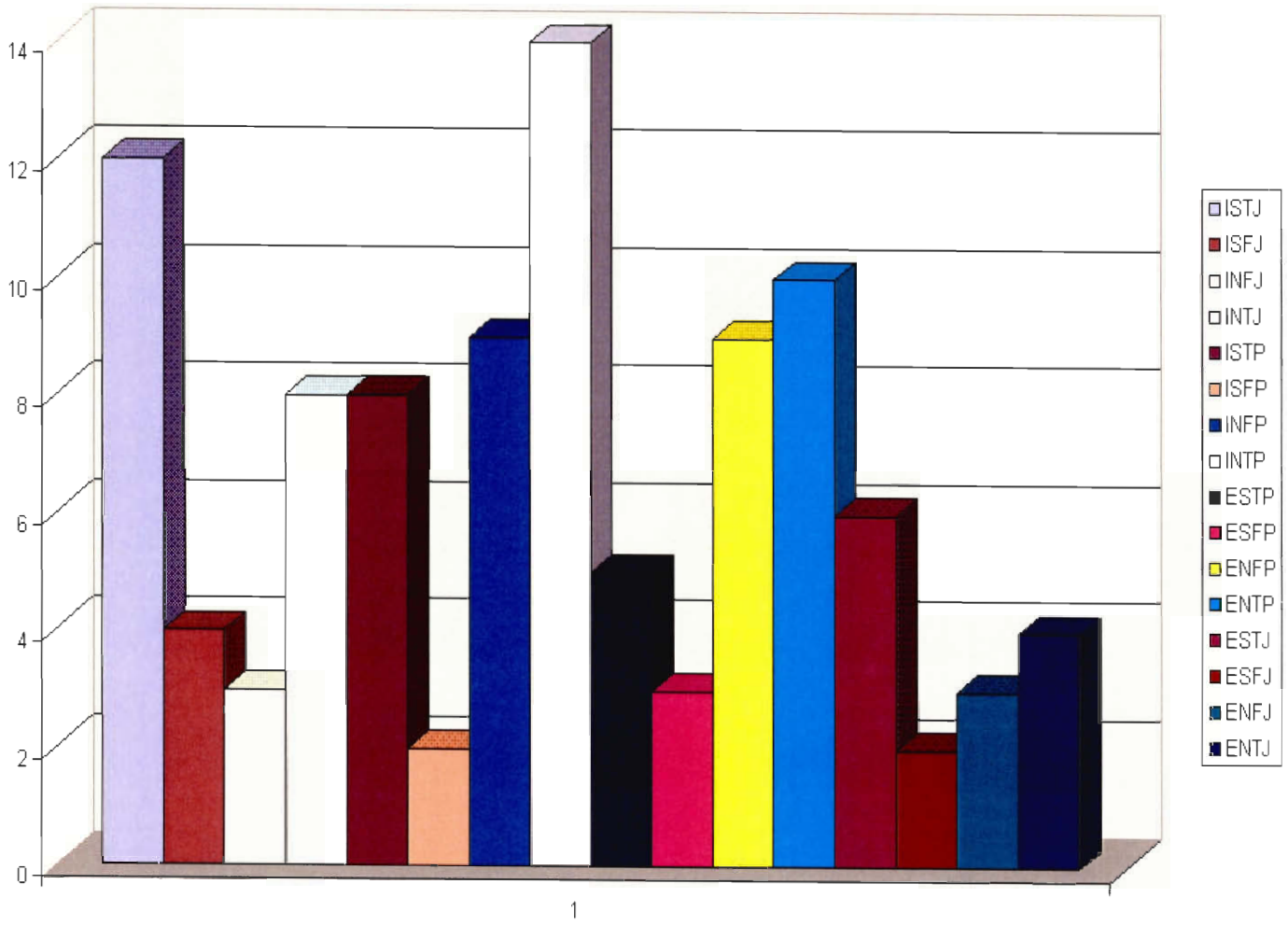
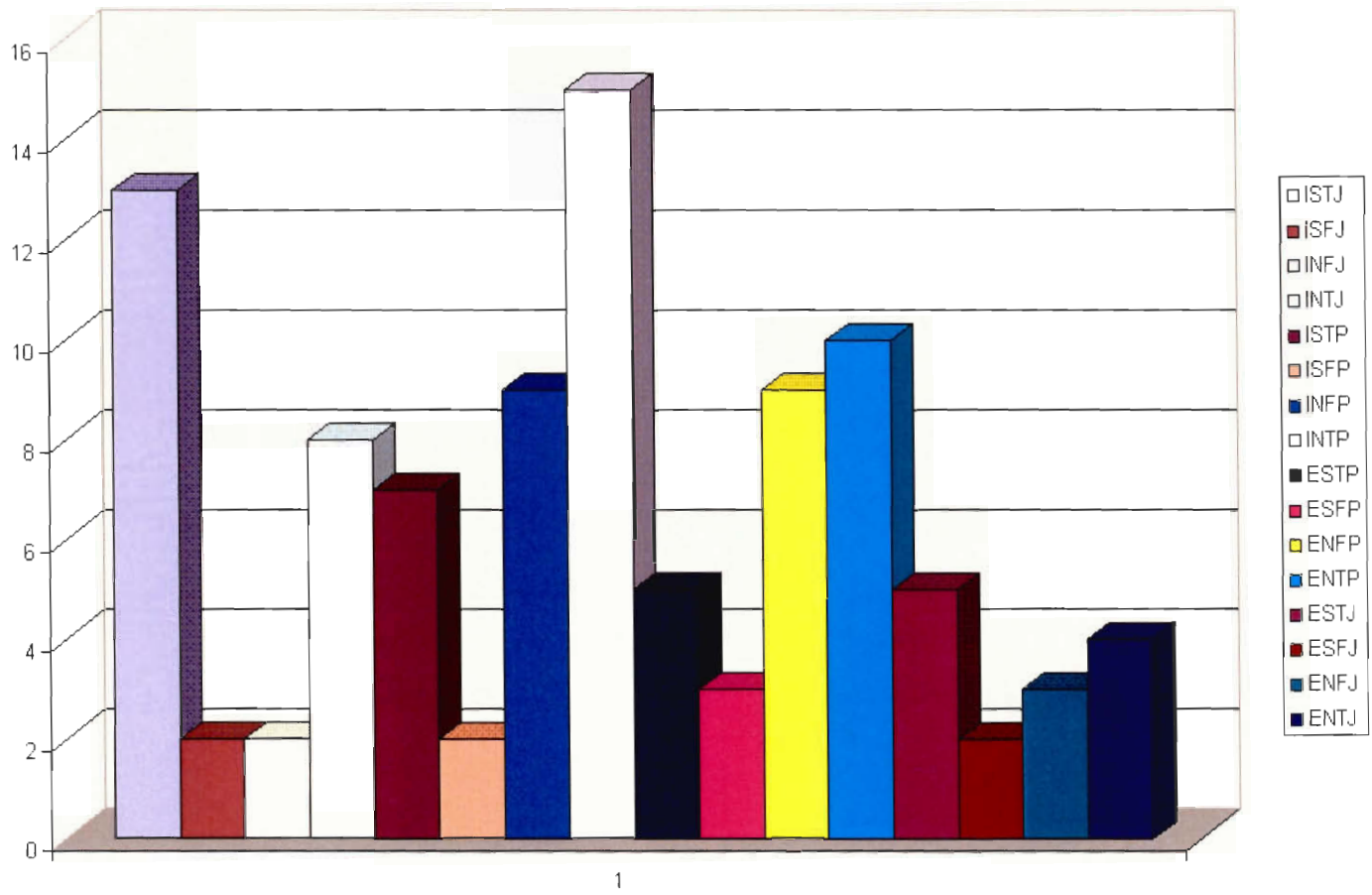
MBTI Distribution of WPI Class of 2004

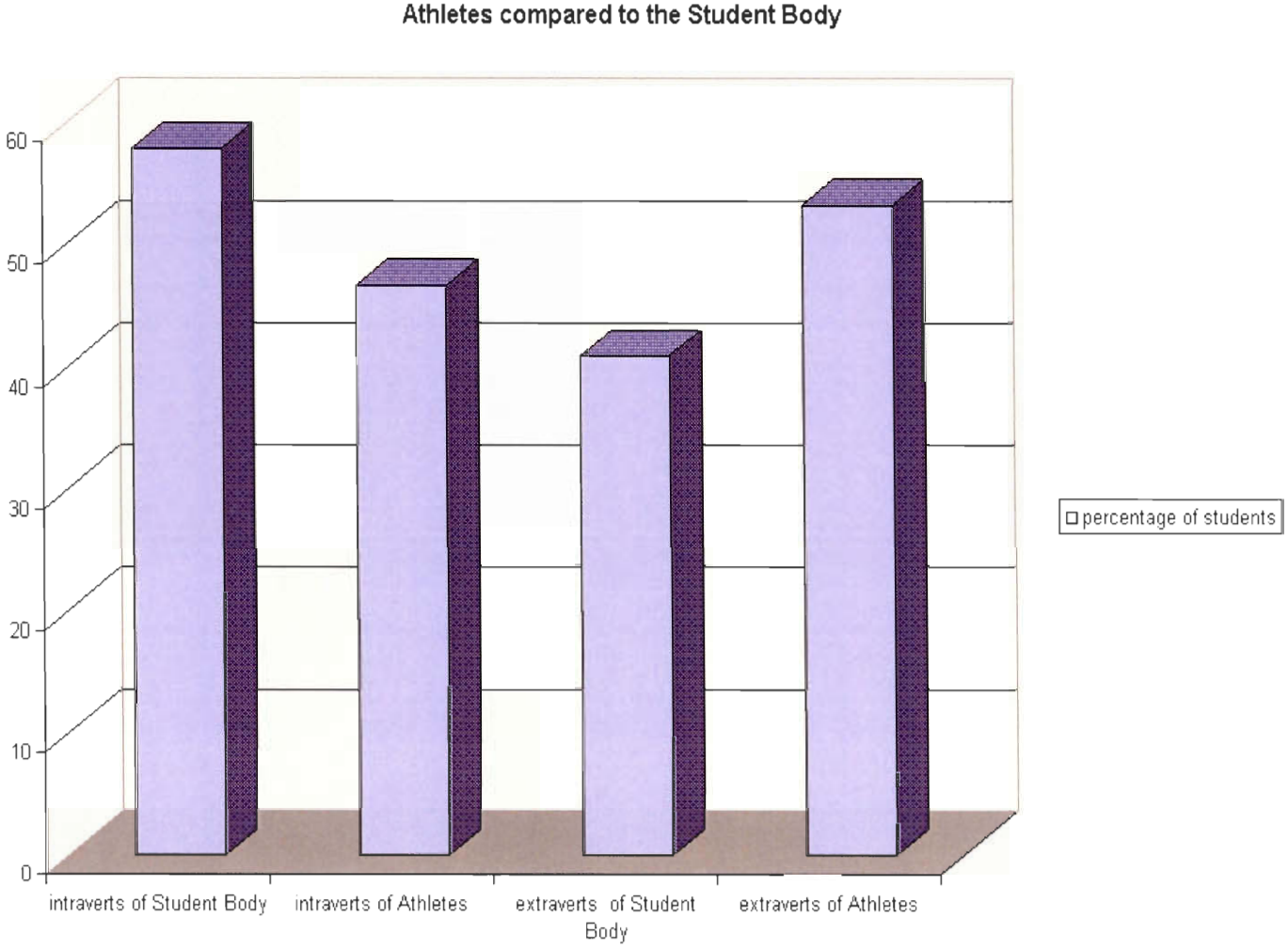


MBTI Distribution of WPI Classes 4 year avg

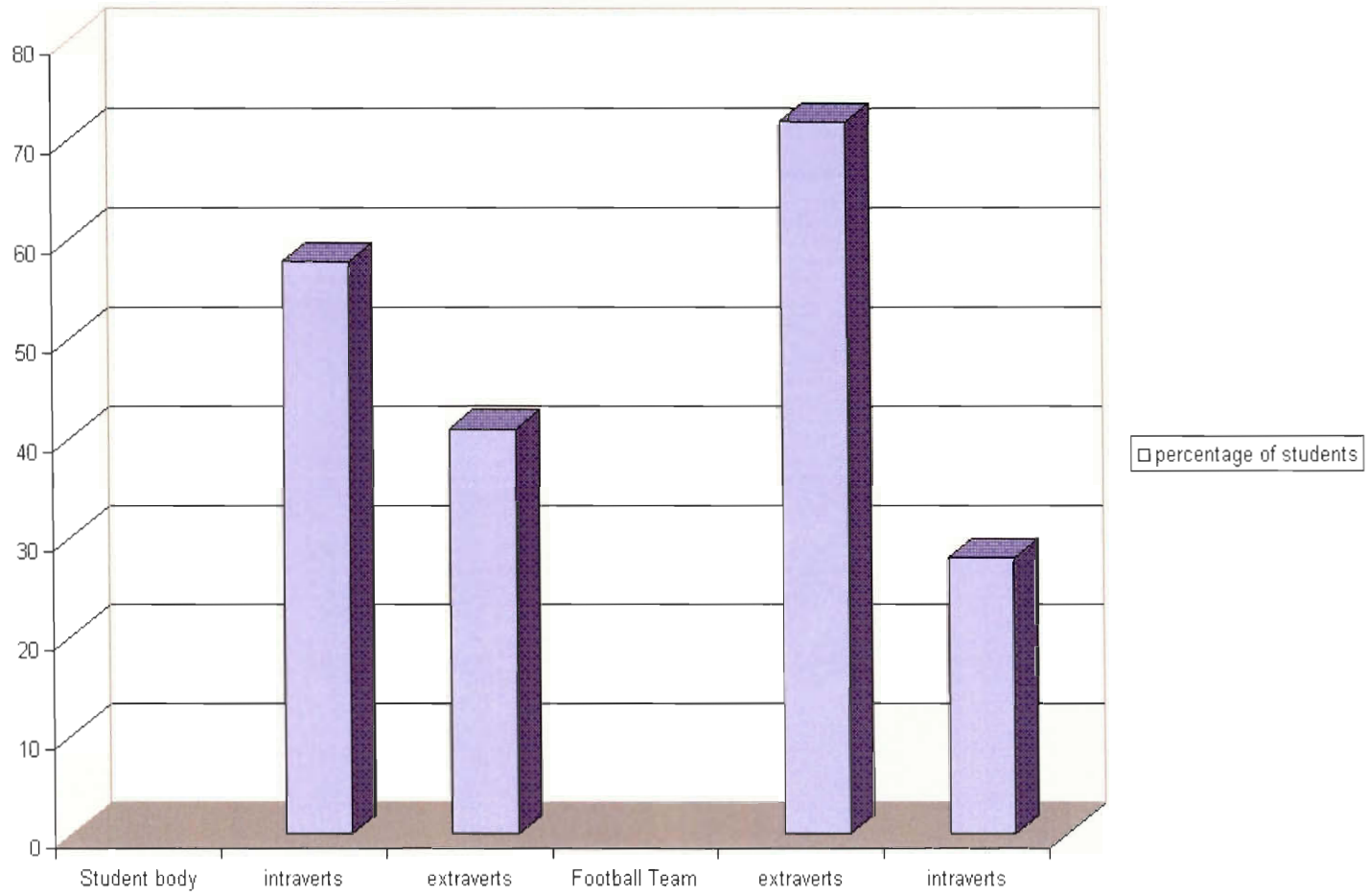


MBTI Distribution of WPI Class of 2003

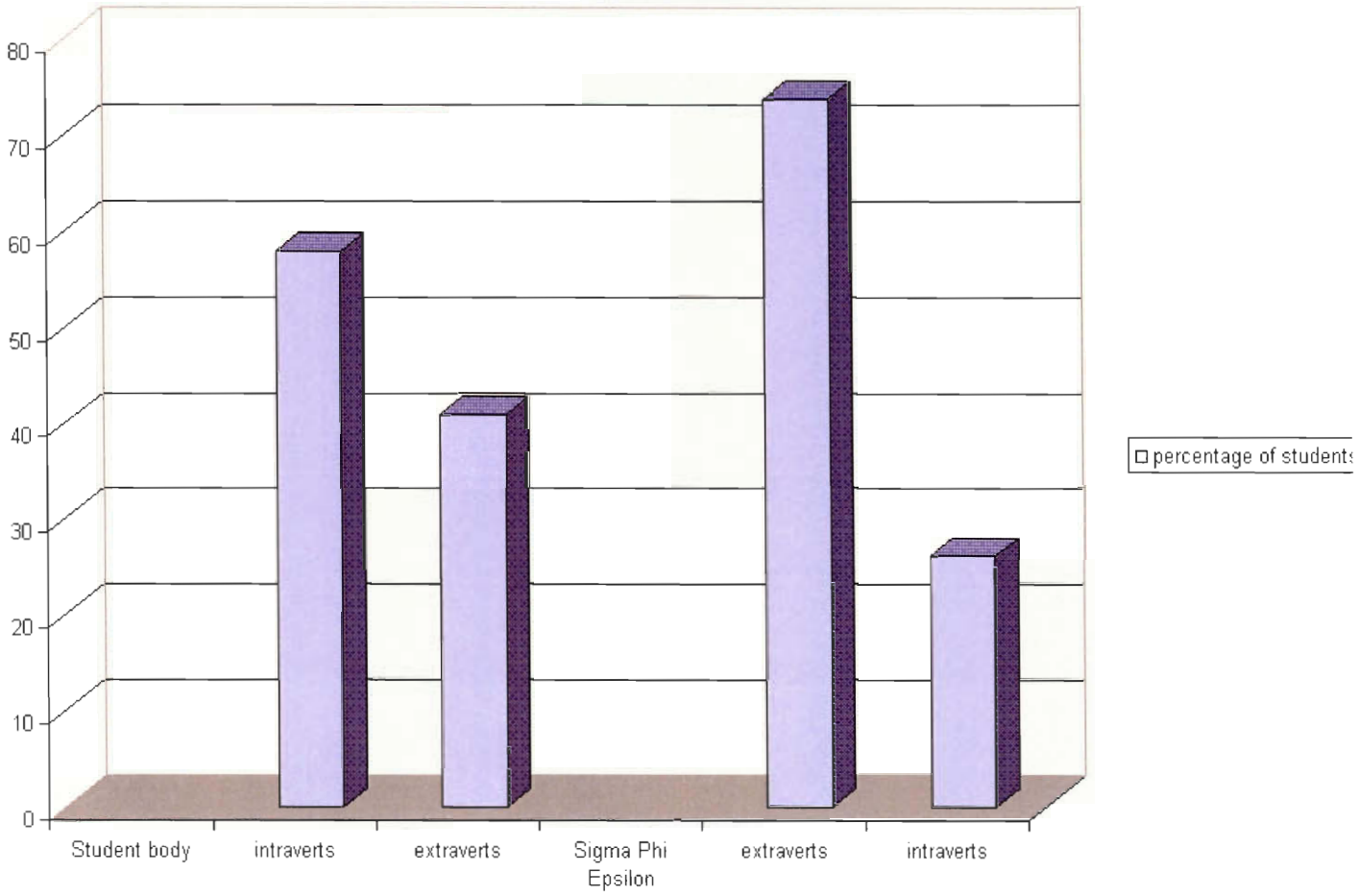



Athletes compared to the Student Body
60
50
40
30
20
10
0
intraverts of Student Body
intraverts of Athletes
extraverts of Student Body
extraverts of Athletes
percentage of students

Student body compared to the Football Team. (2001)



Sigma Phi Epsilon compared to the Student body (2001)



References

http://www.mbti-certified.com/mbti.htm

http://www.odysseycoaching.com/myersbriggs.htm?source=overture

http://www.teamtechnology.co.uk/tt/t-articl/mb-simpl.htm

http://astrology.about.com/library/weekly/2001/aa020801c.htm?iam=dpile_1&terms=MBTI+Dominant+Function

http://astrology.about.com/library/weekly/2001/aa020801c.htm?iam=dpile_1&terms=MBTI+Auxillary+Function

http://astrology.about.com/library/weekly/2001/aa020801c.htm

http://astrology.about.com/gi/dynamic/offsite.htm?site=http://www.personalitypage.com/high%2Dlevel.html