EXAMPLE IN DATA ANALYSIS

Provide an analysis of the following data. List categories and provide examples. What are your assumptions that underlie the categories you constructed?

Scientific Knowledge

(Grade 11 student)

"Worship with words, with sounds, hands, all joyful, playful and obscene"1, is this not in itself a perfect description of how we learn and perceive physics. Since our perception is a limited one, and our knowledge is obtained through our perception of things, the scientific knowledge we obtain cannot be artificial but very real. Granted it does not show nature r as it really is since what we learn must be within our perceptions, not allowing us a totally unbiased view, or even more specifically the ability to look at nature totally objectively.

When someone drops something it falls towards the earth, we have chosen to call this phenomenon "gravity". For us this is a very real occurrence, ask someone parachuting for the first time. If his shoot doesn't open there is nothing artificial about his death, things fall towards the earth when dropped. The problems with science, arrive when humans attempted to predict and explain these very real, perceivable phenomenon. Velocity, acceleration and even gravity are just words, that men use to describe these phenomenon's and in order to help predict them. Thus since it is our perception that controls the way in which these phenomenons are described, it would only make sense that they do not describe nature as it really is but in a way that is comprehendable for humans. You may ask in what way are our perceptions limited, our vision is limited to the visible light spectrum, our hearing between 20 Hz and 20,000 Hz we see in two dimensions only, and have little perception of time or more exactly the passage of time. Hence the laws and theories we study are but descriptions of actual phenomenons with in our human perception, a colourful story in a book. These laws don't actually exist outside of our minds, they are but a tool, a means by which we describe and predicted these very nature of perceivable phenomenon.

Thus for us the "truth" is an impossibility to discover. This statement stems from the assumption that the actual nature of a thing is the truth about it. If we define truth as our collective agreed upon idea of something, ie there are 100 cm in a meter then the truth is very easy to discover. It entails r the observing of something and then proposing a way of describing it, in a way that a large number of people agree on. This makes truth a creation of man, acceptable to change by man. We need only look at the set of laws Newton proposed, which were thought to be the gospel "truth" until Einstein came along and altered humanities truth with three laws.

(illegible) "Man's truth" is evident through out history, it was once thought that a woman's "desire shall be to thy(her) husband, and he shall rule over thee(her)"2, Ecclesiastes even goes as far as to state "and I find even more bitter than death the woman, whose heart is snares and nets, and her hands as bands;"3. Societies ideas of women have obviously changed greatly over the last two centuries, none the less this was the truth at ~041 t one time according to human kind, who is to say which is the way of nature or what nature intended. Similarly recently I have "disappointed" and upset people for having a beer. The law and the majority of the people think it is wrong for children to consume alcohol, and more specifically it is wrong to do so at school. Since most people believe this, it becomes the "truth" to drink under age or at school is wrong, again how do we know if this is nature's intention, or the way it is suppose to be. It is merely the way man has molded their ideas and thoughts (admittedly with reason and thought) into right and ~' wrong, truth and falsehoods instead of, in agreement with society in general or in disagreement with the rest of society. Hence science creates and destroys truths and in no way describes nature as it really is but in a way that is comprehendible to the human perceptions.

We are now forced to ask ourselves what shape do these tools and truths take and how are they used by us. The answer takes us to the beginning of this essay it is "with words, with sounds, all joyful, playful and obscene" that our scientific knowledge is based on. The language we create and use ~o describe our ~1 observations becomes the tool itself, by changing the language we not only change the law and principles science is stating truths but we also change a previously accepted truth and effectively make a new one. Thus it is language and the way in which we choose to define the phenomenon we observe that is at the core of our knowledge, it is through these words that we arrive at the images and ideas that allow us to predict and explain our observations. This holds true for everything in our lives it is through our language that we communicate our ideas thoughts and feelings and it is also through them that we are able to learn through the recreation of our perceptions with in our minds.

In conclusion it would only make sense that a scientists social environment would influence the content of the knowledge he proposes. As previously stated it is through our observations, which are limited to our perception that we discover natures phenomenons and then through our language that our ideas are communicated, to be used as tools by others. Our social environment alters at times our perceptions and observations, if these are altered the whole process is as well, thus affecting the knowledge presented. If a scientist is placed into an environment where the attitude is to accept authority not question it, or anything but to conform, his theories and ideas likewise blunt straight forward and unquestionable, a product of observation not questioning and thinking. Similarly if a scientist inhabits a very wild, crazy environment in which having a good time and partying is the number one priority instead of thinking and questioning, again the quality of the proposed ideas will be poor. Yet by no means is it necessary for this to be so, if the scientist ignores his environment, refusing to conform or accept things with out question then the quality of his work can be just as good as anyone elses, (but who defines good and bad?).