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TOK Essay--Personal Notes from the May 2010 Exam Session



Disclaimer: The following notes are my own observations from my experience reading TOK essays during the May 2010 exam session. These comments do not reflect official or sanctioned IB policy, and my observations may be considered incorrect by those responsible for issuing final marks. These comments should not be taken to provide any comment on any individual essay, and they cannot be construed as suggesting that any particular essay was incorrectly scored. They are intended only to point out patterns that I personally considered to be either effective or ineffective. These notes should not be considered as a replacement for the TOK Subject Area Report (SAR). The SAR should be considered authoritative, and where my remarks turn out to contradict that report, my remarks should be considered to be faulty. Do not reproduce this report in whole or part without this disclaimer attached.

Use of Sources

There continues to be fairly widespread use of sources in inappropriate ways. As the prescribed titles sheet specifies, this is not intended to be a research paper; thus, sources should be used in limited ways--to validate facts, primarily. Many students, however, seem to be trying to use sources in order to find the ideas that shape their arguments. Alternatively, they do an Internet search for a quotation that has one of the topic words in it ("truth," for example), and then they stick the quotation in, despite the fact that it is unrelated to the actual discussion at hand. When sources are used, they are frequently poorly documented, many students failing to follow the directions to include access dates for websites and page numbers for print sources. Many students appended lists (sometimes lengthy) of sources that were NOT cited in the essay. The existence of such a list suggests that the student called on them in shaping the ideas in the essay, but then did not cite them; thus, we don't know, as readers, whether some ideas in the essay are plagiarized or not. Many sources referenced are unreliable--Wikipedia articles with significant grammatical problems, college student papers, research papers for sale on the web, and so on. The fact that these sources are cited suggests students know not to plagiarize, but the fact that they are so often of questionable authority suggests that students do not understand the material and so cannot make sophisticated judgments about what constitutes a good source and what does not.

Online Collusion:

The use of Internet chat boards or blogs which overtly discuss the titles seems to be spreading. There are more sites available and more students openly referencing them. A particularly worrisome site is this one: <http://ibtokspot.blogspot.com/>. This site not only provides detailed discussion of each individual title (for the past three years), including how to interpret the title, what KI are relevant, and what approach should be used, but the writer is also in the process of organizing study weekends around the UK for the explicit purpose of discussing each 2011 title

in depth (this site has had more than 53,000 hits). I would like to see teachers alerted to the existence of these sites and advised to take an aggressive approach with their students in educating them about the sites and why their use is unacceptable. A policy statement from Cardiff might be called for at this point, as many teachers either don't know that their students are using these sites (don't recognize and don't check the URLs the students reference), or they believe that this kind of collusion is acceptable.

- <http://findhorn.blogspot.com/2008/09/responses-001-2008.html> This discussion is over Title 1 from the 2010 titles. Any URL with blogspot in it should be treated as suspect and verified by the teacher.
- <http://aiatokgroup2009.wetpaint.com/thread>
- <http://ibtokspot.blogspot.com/>
- <http://findhorn.blogspot.com/2008/09/responses-001-2008.html>
- <http://www.fratfiles.com/essays/179192.html>
- <http://bloggerrahil.blogspot.com/2009/09/discuss-claim-that-some-areas-of.html> This is a student's actual TOK essay on the current year's topics. It was cited as a source in another student's paper.

A smaller number of students copied work directly from other people (usually websites) without using quotation marks or providing citations. These were often painfully easy to spot, as the sophistication of vocabulary and the control over clarity and sentence structure would suddenly improve dramatically. This is very straightforward cheating, and teachers ought to be spotting it. Perhaps many teachers do not read these essays in a draft stage before sending them to examiners. Or possibly students simply add in the plagiarized material after the teacher has seen it. Some schools could benefit from using turnitin.com, as some collusion occurs among students at the same school but in different sections (with different teachers).

Use of Examples:

I would LOVE to ban the use of any example (or any text at all) from the commonly used TOK texts--Alchin, van de Lagemaat, Woolman, and Bick/Rotenberg/Dombrowski. I read about white swans as an example of inductive reasoning, Sapir-Whorf as proof that language shapes thought WAY too many times. Teachers and students need to understand that they take a big hit on criterion B if what they mainly do is recite back the stuff they read in the textbook. There are several categories of poor use of example; I have provided an appendix of examples of each type, in case it might prove useful to give teachers a selection to demonstrate the kind of problems that are costing their students marks. The types of problem examples I noted are:

- Speculative or invented examples.
- Examples which are not relevant to the discussion.
- Examples which are badly or insufficiently analyzed with regard to the claim being made.
- Examples about which the student has insufficient knowledge, so that they are rife with factual inaccuracy and/or the explanation is unconvincing.

Evidently, *Guernica* and *Mona Lisa* are the just about the only works of art to which IB students are being exposed.

A related problem is an inability to make effective claims statements about knowledge issues, though this seems to me to be a problem that is central to the course: students who do this poorly are those students who have not fully understand the basic point of TOK.

Basic Writing Skill

As in previous years, I find that weaker students tend to give into the temptation to make hard-core all-or-nothing statements: either something is seen as the way it is (title 7) or it is not. Either something relies on emotion, or it relies on reason. Either something is invented (title 9), or it is discovered. Few students are able to demonstrate any kind of sophisticated understanding of how ways of knowing interact, or how there might be different answers for different situations. It is evident, from reading these essays, that many TOK teachers discuss color perception as a means of trying to illustrate the idea that we cannot get inside anyone else's head, but this learning has been almost universally overly simplistic. MANY students, writing about MANY different titles made dogmatic assertions that what I see as red you might see as green, and there is no way to know any different, as we have learned to call what we see "red." This unsophisticated view of things ignores the fact that we know enough about the physiology of the eye, physical properties of objects, and physical properties of light to allow us to assert with a good deal of certainty that what you see is very very similar to what I see, unless there are significant changes in the physical components of seeing: color-blindness, darkness, and so on. Certainly under those conditions, people will see differently than they will under other conditions, but even those differences are predictable based on the physical properties of the objects involved. This kind of overly simplistic, dogmatic, and dichotomous thinking was rampant, and suggests that an area of improvement for instruction would be in helping students to a more sophisticated, nuanced, complex understanding of how knowledge is made.

There was widespread inappropriate use of indeterminate pronouns without antecedents, like "it" and "this," which resulted in sentences which don't make sense. There is also, surprisingly, a pretty widespread lack of understanding that words such as "hence," "therefore," "because" and "thus" identify for the reader a specific relationship between two ideas. They seem to be used as synonyms for "and," a phenomenon which also resulted in incomprehensible sentences and/or factually inaccurate statements.

General problems of argumentation: a larger number of students than I remember from previous years tried to argue using questions. I read many paragraphs that consisted of a string of questions, and I read a significant number of essays in which nearly every paragraph ended with a question. Questions--or rhetorical questions--are nearly always an ineffective means of argumentation, because it leaves the point to the reader to infer. All of these basic writing problems lead to reduced marks for Criterion C, and can influence the marks for all three of the other criteria, depending on the specific kind of problem evinced.

Comments on Specific Titles:

Title 1: Truth in Math, Arts, Ethics

Almost universally, the title was subtly altered to "Is truth different in mathematics, the arts, and ethics?" Or "How is truth different in mathematics, the arts, and ethics?" Since the answer given in virtually every case was that math has absolute truth, the arts have subjective truth, and ethics has relative truth, there was an IMPLIED answer to the question, in that one could infer that truth was different in these three areas to the extent that each has its own version, and there is no overlap at all. I don't think I read one essay, however, in which the "to what extent" part of the question was overtly addressed. Almost every essay argued that truth is absolute in math because math relies on reason, truth is subjective in the Arts, because art relies on emotion, and truth is relative in ethics because ethics relies on perception. This overly simplistic dichotomizing never resulted in thoughtful, insightful, or original discussion. In addition to relying on this very common framework, very few students made an effort to differentiate between subject and relative truth.

Most essays presented the argument in that order: Math, Arts, Ethics; a very few attempted minor adjustments by saying, for instance, that one or more of the three AofK have two types of truth in them. The use of this essential framework occurred so many times that it is difficult to believe it was not the result of over-coaching by the teacher (or by collusion); however, since I saw it in several schools, it occurred to me that this overly simple framework of truth is being commonly taught. I also wondered, by the end, whether this was simply a fault of the question. I had a difficult time deciding, for Criterion B, whether students had relied on each other or a teacher too much, because the similarity among arguments was so excruciatingly similar, but it does seem to me that perhaps what I was seeing was the answer that the question begged. Students with a satisfactory, but not sophisticated or complex, understanding of TOK principles might be expected to give this as the obvious answer.

When talking about the Arts for this topic, a common significant problem was that students tended to conflate truth and beauty without justifying that choice. Virtually all students failed to address any CONTENT in the arts, assuming that to talk about truth in the arts was a simple matter of determining whether someone truthfully likes a particular work of art or not, or whether something can be called art or not. A clear majority of students reduced "the Arts" to painting.

Knowledge about mathematics was also shaky; students commonly misused terms such as "axiom" "theorem," and "equation" (which was several times conflated with "proof"), and there were frequent signs that general mathematical understanding is weak. Numerous students, for instance, claimed that Euclid's axioms ceased to be true when Non-Euclidean geometry was developed, missing the subtle, but essential, point that the axioms for Euclidean geometry are true for the context in which they apply, and that the axioms for Non-Euclidean geometry are ALSO true for the context in which they apply. Misunderstanding about this kind of general, fundamental principle of mathematics makes it very difficult to argue convincingly about the nature of truth in mathematics.

Several students attempted to argue that truth in mathematics could be called subjective because individual knowers must believe in mathematics in order to believe in it, so for knowers who didn't believe in mathematics, there could be no mathematical truth. It seems to me an unrealistic (and profitless) endeavor to treat as a serious academic argument the idea that there could be some people who don't believe in the existence of math. Many students wrote about mathematics as if it exists solely as a practice in schools, in which students simply plug numbers into formulas. Several students overtly stated that they believe math is true because they are told it is by their teachers, and because it always works, no matter how many problems of the same type they do. This characterization of mathematics as inductive strikes me as an extremely rudimentary understanding of maths as an area of knowledge.

As a more general problem, not limited to any one of the areas of knowledge, many students failed to differentiate overtly between something that is "untrue" and something that is wrongly believed to be true. So, for instance, one student argued that all truth is relative, and gave as her justification the notion that people once thought the sun revolved around the earth. Another student said that some people believe in God and others don't; thus, truth is relative. These are examples typical of students who failed to recognize that the sun either revolves around the earth or it doesn't; God either exists or doesn't. The fact that there are (or were) differing beliefs about these things does not alter the truth, it merely means that someone is wrong.

I read one excellent essay on this title. This essay, though acknowledging some problems, demonstrated a sophisticated understanding of all three subject areas and dealt with truth as something integral to each area, though of perhaps a different nature. For mathematics, the student identified two types of truth: "The truth of axioms and the truth of the derived proposition." For the arts, the student used the idea of elements to which people have responded across culture and over time (such as the golden mean) to suggest that there is accessible truth in the arts. This essay dealt with music as well as painting and literature. He also acknowledged that emotional connections between artist and viewer are a kind of truth. Uniquely to this student, for both arts and ethics, he made the point that there is the related truth in terms of how people use them. For ethics, for example, he said "However, even in Ethics we can see that despite the relative character of moral judgments, morality is a human universal whereby all people throughout recording history appear to organize their lives around moral codes of conduct." This was the only student to try to treat this title in a sophisticated way.

I read one more outstanding paper on this title in my moderation sample. This student addressed the question by considering much larger issues than the simple mechanisms of knowledge making. Instead, she considered the gestalt nature of each of the three areas of knowledge, arriving at conclusions such as this one: "Nevertheless, one may form an alternative link between mathematical and artistic truths by viewing mathematics, just like art, as a form of symbolism; just as in literature, where imagery and metaphor are employed to represent a concept or idea--something conveying the truth--mathematical symbols are used to represent hidden or unknown values. Both are methods of symbolism which mask truth whilst also containing the mean to unveil it." The whole essay focused much more on the connections between the kind of truths one might find in the three apparently dissimilar areas of knowledge, and, as such, it was not only highly individual, but also vastly more sophisticated than most of the much more pedestrian attempts at this title. Essays such as this one are a joy to read.

Title 2: Ways Empirical Evidence Should be Used to Make Progress

One student (of 166) wrote to this title, but did an outstanding job. Established, first of all, the difference between simple sense perception (or things perceived through the senses) and empirical data, and then evaluated the role of empirical data, as a positive force, in making knowledge in Biology and History. For Biology, the discussion identifies two ways in which empirical data should be used: one, to validate observations made across situations (used the example of hibernation, which can be observed in a wide variety of species) and, secondly, as derived from deliberate experiments to model real-world phenomena (using an example of a lab recreation of global warming models using water, ice, soil, and vegetation covered in plastic). Concludes that progress in Biology (specifically, but the natural sciences in general) depends on empirical data. For history, the student used examples from archaeological finds which supported religious stories as historical claims. Implication was that empirical example can be useful in history but is not fundamental in the same way. Essay concluded with the acknowledgement that in neither case can empirical evidence guarantee certainty and permanence.

Title 3: Qualitative Data & Quantitative Data in 2 AofK

This was a less-popular title, and there was a clear division in quality between those essays written by students who were in fact taking a human science (almost always Psychology) and those who were not. Most students writing to this title had a general idea about the fact that data is difficult to gather in the human sciences, but virtually no concrete understanding of any particular human science or of any particular data set. Essays read as a litany of memorized ideas about problems with collecting useful data in the human sciences--I would bet that these are the lessons they learned in TOK class, and that they have no actual experience with qualitative data, and so a useful comparison with quantitative data was impossible. Teachers definitely should have steered students away from this title unless those students were taking Economics or Psychology, for example. A depressing number of students didn't really seem to understand what quantitative data is, either, though presumably all of them take an IB science....

Just as an observation: in general, the poor essays among these were the worst papers I read among all the titles. Perhaps this is the title that seemed deceptively easy, for whatever reason.

Title 4: Ways of Knowing and distinguishing between truth and believed to be true

This was a popular title, but not well handled. A number of students seemed to have trouble with the many parts that needed to be addressed, and so, rather than writing about how both truth and belief might be seen to function in a given Area of Knowledge, and how one or more Ways of Knowing might lead to that distinction, there was a common inclination to divide them and ascribe truth to some AofK and some WofK and belief to other AofK and other WofK. These wholly artificial divisions resulted in essays which revealed a distinct lack of sophistication in understanding TOK concepts. Better papers dealt with the Ways of Knowing only, and referred to Areas of Knowledge only through examples, rather than trying to characterize some as generating truth and some as generating "only" belief in truth.

One problem that seemed to be fundamental to the failure to produce excellent essays was the fact that students did not seem to understand (and certainly did not clearly explain) the difference between something that is true and something that is believed to be true. Most commonly, that which is believed to be true was equated (usually without overt acknowledgement) with that which is just wrong. Belief, in other words, was assumed to be false belief. This, in turn, seemed to drive students into a position of skepticism, and many students writing to this topic concluded that all of the ways of knowing are so flawed that truth is unattainable, and we are left to our hopelessly flawed beliefs. No one attempted to tackle the more difficult, but more sophisticated notion that sometimes "believed to be true" is the best we can achieve, and that it proves to be quite functional in terms of both our day-to-day lives and in terms of generating further understanding of how the universe works. Some students approached this much more directly, arguing that since we have no direct access to reality--sense perception, emotion, language, and reason all functioning as "filters," everything we could possibly know is necessarily an interpretation, thus not equal to reality, and thus not "truth." Since such a position negates the title, it seems that students choosing this position of total skepticism chose badly, as the title necessitates that we accept that truth exists.

Another common error was in trying to argue that because our knowledge changes over time, the old "knowledge" was necessarily wrong, and thus a "belief" only. For example: students would say that before there were microscopes, our sense perception led us to "believe" that solid objects were solid, and that we believed that that was all there was to it. They then go on to argue that the invention of technologies gave us new insights, negating our old knowledge. This simplistic argument overlooks the fact that if people really thought that the universe perceivable by our unaided sensory mechanism was all there was, there would have been no need to develop technologies expanding those abilities. It also overlooks the fact that such beliefs were not fully wrong; they were just incomplete. Atoms may now be known to have a component part called a quark; this does not mean they don't have the protons, neutrons, and electrons that were all that was known some decades ago. What we can see with the naked eye, in fact, is not negated by technologically aided sight; it is expanded and enhanced. What is proposed, then, in these examples, as something that was "believed to be true" but was not "true," is, in fact, true. There was a related widespread tendency to assume that "truth" had to mean "absolute truth," and, additionally, that "absolute truth" had to mean that something is true in all places, under all conditions, for all time. This assumption was then used as the basis for arguing that "truth" is not achievable, which argument dodges the requirement of the title.

Quite a few candidates at one school chose three of the four TOK Ways of Knowing to discuss, despite the fact that the title says "the Ways of Knowing," clearly implying that all four of the designated TOK WofK ought to be considered. I did not consider this to be a major failure to address the title; however, it was widespread enough to suggest that the teacher advised the students to take this approach, which may in turn suggest that the teacher was providing too much guidance in the completion of this task.

Title 5: Science and the Belief in Provisional Nature of Conclusions

I read only three papers on this topic. The main problem that arose in arguments addressing this title was the failure to understand the quotation. The idea of the "...provisional nature of all conclusions" was applied differently to different areas of knowledge, rather than being considered conceptually as meaning one thing which was then compared head to head across areas. For example, one student tried to argue that: "in science, people don't really know anything about reality, because they keep changing what they believe," "art is not provisional because we still like very old art," and "in history, knowledge is provisional because people are biased when they record events in contemporary accounts."

The second student made claims about provisional knowledge in history but did not provide sources or justification for the changes in perspective he claimed occurred and which formed the key foundations of his argument. Claimed that the only content in art is whether it is beautiful or not.

A third student did a much better job, because she understood the demands of the title. This student did not, however, understand the difference between Religion and Natural Science as Areas of Knowledge, and so some of her argument collapsed because she tried to claim that evolution is "only a theory" and can be replaced at any moment by creationism. She did not explain how the methods of science would be capable of producing an answer on the issue of creationism.

Title 6: All knowledge claims should be subjected to rational criticism.

Unpopular title resulting in very weak essays. "Criticism" was frequently not defined as a concept, and almost universally conflated with any effort to gain knowledge. "Rational" was often taken to mean any application of so-called reason, however ineffective; thus, "irrational" was taken as "rational," and the claim was rejected on the basis that "rational criticism" is so often irrational. These essays were also extremely poorly constructed; most appeared to be first draft stream-of-consciousness efforts. Often there was little or no paragraphing, even.

In my moderation allotment, I read one quite outstanding essay on this title. Here is a sample of the elegance and sophistication of thought: "If there had been universal acceptance [sic] that knowledge must not be criticized, then currently it would appear that we would be ignorant to many aspects of the world...it is arguable that this criticism could have negatively affected many more than it helped [due to] the fact that the criticism directly contrasted something which many have so firmly afflicted [sic] their faith....Although it would appear that in the long-term this criticism of the world's knowledge benefited our society and civilization, the stature of a highly respected....source was immediately diminished. This raises the issue of the sacrifice of emotion or even happiness in the search for the truth; are our development and our technological advancements worth the sacrifice of happiness?" Despite the sometimes clumsy wording, the sophistication of the thought and the powerful sense of genuine inquiry here are remarkable and delightful.

Title 7: We see and understand things not as they are but as we are

This was by far the most popular title (more than 1/3 of the essays I read in both my own allotment and the moderation samples sent by my team were on this title), and there was a pretty dramatic difference in how well students handled it from school to schools. Weaker essays were characterized by a dramatic failure to understand that the significance we invest in real things does not actually undermine or alter reality, and that we can have multiple meanings all true at the same time. Students from schools in which total skepticism has evidently been fostered wrote much less compelling essays than students from schools in which a more sophisticated understanding of how we manage to transcend our limited ability to perceive things outside of us wrote much more interesting and much more insightful essays.

Among the poorer essays, the overwhelming tendency was to ignore the fact that the title specifies "see *and* understand" (italics mine) things as they are, the "and" giving both terms equal weight. Almost every student attempting this title conflated "see" and "understand," treating them as a combined "perception" (in the sense of understanding), and then focused on the idea that understanding takes place inside individual minds and thus must be individual.

One of the most common problems for students writing this essay was that they adopted an unacknowledged assumption that the only way we could agree that humans see and understand "things as they are" would be if the seeing and understanding were absolute and universal. A typical example of this kind of reasoning: One student used an example of a mother from Milan and a father from Alaska. The mother complains a lot that it is too cold; the father wants to open the windows. Ergo, the mom and dad see things (the temperature) as they (the mom and dad) are, not as it (the temperature) actually is. The student missed entirely the possibility that both can be true at the same time: that the mother IS uncomfortably cold at that temperature, and that the father IS uncomfortably hot at that temperature. Too often the ability to "...see and understand things as they are" was interpreted (by implication, not overtly) to require the observer NEVER to be wrong at any time in the process, to require the observer to be able to see every single aspect of something (or everything), and to require every single observer to perceive the thing accurately. Thus, if students could prove that they were once confused about something (though they later cleared up the confusion) they were failing to see reality; if they could see only part of an object or situation (including the microscopic properties), then they were failing to see reality; or if they could perceive reality but someone else couldn't, then that was a failure of reality. No student noted that where there are disagreements it might be a sign that SOME people see things as they are while others are wrong. (So Galileo's revision of the planetary order was commonly offered as proof that we don't see things as they are, as was Holocaust denial. In some cases, it was actually pointed out that Galileo was right and the Holocaust deniers are wrong, but then the students invariably went on to say that this proves that we understand things as we are, rather than as they are.) This got very frustrating to read after awhile.

An inevitable consequence of the failure to take "see" literally was that the discussion focused on "things" that are not physical entities (religion, relationships, emotional states, the 'meaning' of art), and so are naturally open to interpretation, subjectivity, and misunderstanding. Students taking this approach, furthermore, failed to note that wherever interpretation is required different

true answers are possible, and they failed to consider the question of whether before interpretation occurs, we begin with the same starting point of data, which we can apparently take in as it really is. A common example, for instance, was that two people looking at the same painting might disagree about whether it was beautiful, but in such cases, no consideration was given as to whether they saw the same thing to start with--even though the discussion clearly implied that both people in question must be seeing the same physical painting; otherwise, the whole argument was invalidated.

Neither did any student give any consideration to mechanisms that we employ in order to overcome our subjective bias and to improve our ability to see things as they are. The universal assumption was that we are victims of both physical limitations and rampant emotional (and usually selfish) motivations. The implication was that we don't desire to offset those, we are unaware that such balance might be possible, and we don't even try. This seems to me to be a singularly unsophisticated understanding of how we make knowledge, and it struck me as the ongoing tendency of students (and, by implication, teachers) to succumb to the temptation to examine only problems of knowledge, to the exclusion of assets. Could this still be a holdover from the last curriculum???

When students DID consider sense perception literally and give some attention to considering whether we even take in data accurately, they tended to do one of two things: either they made the assumption that unless we can perceive absolutely EVERYTHING in the universe, then we do not "see things as they are," then proceeded to argue that since our sensory mechanisms are limited, we cannot perceive things as they are (this seems to me to be an uninteresting and unhelpful interpretation of the title); or they chose to focus solely on extreme cases and then allowing those cases to stand for all. Example: People in a panic in a fire push a door to try to open it instead of pulling. This makes the good point that in that situation, overwhelming emotion kept the people from seeing the door as it really was, but the implication then drawn that emotion always keeps us from seeing things as they are is a failure of understanding. This was a common strategy--students used blind people, color blind people, optical illusions, and extreme emotional duress to make the case that in general our senses fail us.

To read these essays, one would conclude that all humans walk around in an alien environment, happily deluding themselves with ideas that they only think have some bearing on reality, and, luckily, getting away with it. I found this to be quite depressing, especially as I think that the critical assumption underlying the TOK curriculum is that reality exists and is knowable. Reading so many of these essays so poorly handled suggested to me that there is a widespread failure to approach the teaching of TOK as it is intended to be taught. I found I was often commenting that if a student rejected the possibility of reality then this was an odd title to choose, as it presumes an independent reality.

Ironically, those same essays always included statements about "things" as if they were unquestionable facts. (One, for instance, proclaimed that "there is one world and many continents," despite the fact that her main thesis was that nothing at all is ascertainable with any certainty, and we all live in "different universes" because of our subjective interpretation of everything.) All but one student (see note below) seems to have missed entirely the irony that in writing the essay, students were perfectly willing to expound on the making of knowledge, the

ways of knowing, the flaws of human judgment, and the reality that we cannot know reality in terms that suggest that the writer, at least, was fully capable of knowing those "things as they are." All these students talked in markedly dogmatic terms about how "perception is limited"; "people are biased"; and so on, and were perfectly comfortable doing so, all the while promoting the argument that it is not possible to know anything as it truly is.

Finally, many papers treated all AofK as if their objective is the discovery of the real world, independent of mankind, and thus missed entirely the fact that many "things as they are" ARE "as they are" BECAUSE we make them so. Mathematics and Ethics, for instance, would seem to be areas of knowledge in which "things as they are" result from conditions set by human beings. This was missed even in simpler terms: students did not seem to understand that I can love to ski and you can hate it, and in each case, we are both aware of things as they are. Our disagreement about the entertainment value of skiing does not prove that one or both of us are incapable of knowing the truth. Thus, most essays overlooked the fact that simple differences in point of view are themselves an example of things as they are, rather than a barrier to it. Almost no students gave credence to the idea that anything we perceive might be shared (outside of science or math). Many essays claimed that, in the Arts, for instance, everyone's interpretation is different, without considering either a) that the likelihood of there being literally billions of interpretations of one painting is very small, or b) that differing interpretations might be the result of seeing a work of art as it is, and then applying different understanding to it. No one considered the possibility that "relative" ethics depends on a group having a shared experience of reality, which, although it might differ from that of another group, must have some basis in the cultural reality in which they live, or shared ethical views would be impossible.

Having read approximately 50 essays on this topic which were, frankly, dreary iterations of an unsophisticated, dogmatic relativism, I got to a set of essays from a school which produced dramatically better essays. Many of these essays still argued that the statement is accurate, but did so in a much more sophisticated way, which showed vastly greater understanding of how knowledge is made, and what the strengths and limitations are of our knowledge-making mechanisms and processes. These essays acknowledged that although we may be limited in our ability to get outside our own heads, knowledge is still possible to a functional and satisfactory degree. One of the most interesting observations I read in this set was from a student who remarked that we are limited in our ability to see and understand by the way that we are made, and "...since we are part of the universe again we see things as we are." I thought that charming--an affirmation that seeing things as they are is confirmation of our oneness with reality, rather than our isolation from it. The same student offered a summation of his (or her) investigation into our ability to see things in Physics that can stand as an excellent exemplar of the kind of thinking that students at this school are doing: "All in all, in the case of physics, sense perception derived immediately by our organs or by instruments that maximise our capabilities seems to represent our environment as it is and not as we are, albeit there are certain limitations imposed by our participating in the nature which is the object of observation by the physicists."

Another student, in a particularly effective conclusion discussing implications of his argument, made this observation: "Thus, the sum of experiences is continually growing because every single moment, whether subconsciously or consciously we realize something more about our existence and about things in general. Ultimately we understand things as 'we are'. It is only

after having enough experience that someone is prepared to recognize the limitations of one's ways of knowing. However, this is not necessarily a negative aspect of our existence since this realization keeps us open to new findings and interpretations." This is the only student who, though arguing that the title statement is largely true, also made an argument that this need not be a source of the kind of pointlessness and hopelessness that all other students implied through their rather unsophisticated arguments for relativism.

Title 8: Seeking Order in Chaos

Few students wrote to this title. The three students from one school who chose it all wrote to essentially the same template. They took the quotation to suggest that there IS chaos in reality, and that all order is, therefore, imposed by human beings who can't stand chaos. This (unsubstantiated) assumption led to quite a lot of discussion of problems inherent in trying to make certain knowledge in a variety of Areas of Knowledge, and then, problems having been established, a further assumption that a failure to achieve certainty also means a failure to impose order. The same basic arguments were used by all students: religion is a fantasy created specifically to impose order where there is none, because invoking "God's Will" as an explanation for everything releases us from any need to explain the inexplicable; there is no truth in History, because a) there are not really any patterns, that is a fantasy we tell ourselves, and b) all History consists of revisionism created out of our need to understand things we cannot really understand; Mathematics only seems ordered, but since we invented it entirely, that is our imposition of order on disorder; and, finally, Natural Science uses experimentation in which there is always a degree of inexactitude, which means that we can't know anything in science for certain, which means that there is really no order. These extremely narrow visions of what goes on in each of the subject areas seemed to me to be unhelpful in actually exploring the question.

Students from other schools also tended to take the chaos for granted, or made peculiar assertions about what constitutes chaos in order to support their arguments. Some examples: general = chaos (as in deductive logic proceeding from the general to the specific); natural science is certainly chaotic because of entropy (example: my bedroom gets messy again after I clean it up); all of history is chaos because it is in the past and we can't witness it. Language is ordered, so without language there is chaos. Fiction is chaotic because it talks about real life. Abstract art is chaos. One student claimed that knowledge is order and lack of knowledge is chaos. This position seems to obviate the need to write the essay.

In no case did any student consider the possibility that the universe might have some order in it--in any area of knowledge--and that our trying to learn is a matter of our trying to perceive and understand that order.

The main difficulty seemed to be that students started out by assuming that the quotation in the title is true, and then expended their energies in trying to make observations regarding implications of that presumption, rather than actually exploring the assumption to begin with.

Title 9: Areas of Knowledge Invented or Discovered

In general, essays on this title tended to be stronger than on all other titles, though very few students chose it. Looking back over the whole set, it occurs to me that it seems possible that one reason for that seemed to be that this title requires students to accept the existence of an external reality; thus, they did not tie themselves into knots trying to be overly clever about claiming that nothing actually exists, that we cannot demonstrate that anything exists, or that everything we know is nothing more than human construction.

Title 10: Historical and Scientific Explanations

Not a popular title. Those writing to this title tended to try to dichotomize science and history both in terms of content and methods. Most focused on the subjective nature of history vs. the objective nature of science, but they tended to ignore many obvious exceptions to the generalization. Essays suggested that nothing is really knowable in history, while in science most things are at least very nearly certain. They tended to ignore the possibility of error or bias in science and the possibility of accuracy in history. While students talked about coherence as a means of validating scientific knowledge, they then ignored the same possibility in history. The discussion of contrasts, then, was much stronger in general than the discussion of similarities, though the question of similarity was not totally ignored.

Science and history both tended to be treated in an overly simplified way; science became experimental lab science (controlled experiments) and history became the examination of primary source documents. Those narrow definitions made it easier to highlight the differences, but also limited the degree of sophistication of understanding displayed in the essays.