## Human Intelligence

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October 30, 2023

Perhaps a precise definition of human intelligence is extremely difficult to formulate, but I am going to make an attempt to capture or express some idea of what human intelligence might be. The point of "projects" in this course is to provide an opportunity for the expression of human intelligence, whatever that may be. Projects, at least in the way I think about them, are not about "grades" or "credit," and if a project is undertaken with something like a "grade" or "credit" in mind, then it is virtually certain that the goal of expressing human intelligence will not be approached. The negative observation that "where grading enters, human intelligence flees" however does not really advance me toward the positive expression I seek.

Perhaps the best positive expression comes through that which, not necessarilly characterizes but, accompanies human intelligence. First of all, there is a perception that something is **understood fully** or at least to a degree that produces a positive emotion of wonder. And yet, this perception is often not first but is preceded by the formulation of a question. In such instances, the formulation of the question should rightly be viewed as the first expression or hint that human intelligence is afoot, or possible. It may even be said that in cases in which intelligence<sup>1</sup> appears as a revelation concerning some question unasked, the question must be formulated for the perception and appreciation of the answer.

I should hasten to clarify that I am not asserting full understanding or any kind of absolute knowledge is possible. My sober evaluation is that this qualification or limitation is unavoidable. In the final analysis every question is deficient in formulation; every answer only compounds the confusion. And yet, the perception of a human that he has formulated, within some context, a clear and concise question capable of definitive treatment and worthy of consideration persists. And sometimes the worthy question—the hint of human intelligence—is met with a (perceived) answer of

<sup>&</sup>lt;sup>1</sup>This is suggested by invoking the chimera of full understanding; intelligence is **knowing**.

complete understanding. While this is a perception that is perhaps better called a misperception, it is very human.

The "question and answer" described above, the appearance of understanding, does not characterize human intelligence but is its indispensable companion. To return to the negative, information is not intelligence. Very often in the context of a (course) project the formulation of a mathematical question with an accompanying detailed and insightful solution can indicate the presence of human intelligence but not always. Such a thing can also be copied and pasted from another source, and it can be copied and pasted without the least presence of understanding. Maybe there is understanding and human intelligence behind it, but it is impossible to tell. There is no indication of it. A machine can also cut and paste, which is more or less the defining characteristic of artificial intelligence. The formulation of a question which can be answered by hitting the return key after typing it into a Google search, does not bring one closer to human intelligence. What is happening there is that a human is being systematically trained to be incapable of human thought.

Developing the habit of "question and answer" without the human process of analysis and understanding is to lose time. It is to waste time. And this highlights a very unintuitive aspect of human intelligence: Human intelligence is often if not primarily manifest with the **absence of information** rather than the presence of it. Human reasoning subject to human limitation is a hallmark of human intelligence. It is not something that a machine can produce. A machine can only prevent its occurrence.

Turning my negative evaluation of the "formulation of a mathematical question with an accompanied detailed and insightful solution" over to its positive side, one can get a much better indication of the presence of human intelligence through direct communication with another human. The solution may be insightful, it may be full of insight(s) like the return of a Google search, but how does it perform under the (intellectual) poking and prodding of another human? If a second human evaluates it as of questionable clarity and/or questionable interest, is there the flexibility of enhancement? Is there a willingness to attempt such enhancement? Or is the presentation static like a search query which always returns essentially the same "links?" Are reasonable questions and critical evaluations met with insightful (and maybe even earnest, enthusiastic, and thoughtful) enhancements or is the response to such interaction silence? Even machines using artificial intelligence can sometimes do better than that.

I stress that the (potentially) positive element here is **communication**. There is the possibility that another human being may view my perception as also clear

and concise, and my insight as worthwhile and essentially complete, even if only temporarily. More generally, within the thoughtful discussion between two humans is the most common context in which human intelligence can be perceived and enjoyed.

Finally, I will attempt to add a kind of final hallmark of human intelligence which gives an indication of its rarity, fragility, and (I hope) perceived value. Let me take as a starting point the characteristic of the absence of knowledge or information as I called it above. This is, at least superficially, essentially contradictory in that knowledge or "knowing" is also characteristic of human intelligence, but the question is one of context. Transcending context, however, is **consequence**. That which isolates humans one from another and causes strife and war, that which reduces understanding or more properly the potential for common perception cannot be called human intelligence. It is not human intelligence. The "knowing" that results in the destruction and pollution of the place in which humans live is not human intelligence. The "knowing" that herds people into a life of dependence in which the sources and consequences of the individual human life are obscured and that life itself is made tenuous is not a manifestation of human intelligence. If one observes and sees these consequences manifest around him, then one should recognize the absence of human intelligence. Though not in these terms, Wendell Berry has spent a lifetime trying to express (and moaning about) the kind of consequences I'm describing here. As Wendell Berry puts it: The crisis of energy is not a crisis of shortage. The crisis is a moral one in that (too many) humans do not know how to use the energy at their disposal without being destructive.

Conversely, human intelligence has the consequence that it produces common perception that is not destructive. It produces a human who understands what he needs and/or uses to live, the sources of those things and the ultimate resting place (and consequence) of those things and their use. It produces humans who interact harmoniously and not destructively.

Of course, when you undertake your project the "big" consequences I've described will likely be far from your mind, and in fact this can probably be said of most experience of human intelligence. Nevertheless, you can look at the small indicators. Are you asking questions that make sense? Do you push the details of those questions until they do? Do you just settle on something and ignore the details in order to just have a project because it was a perceived "requirement?" (You should rethink that.) Do you "cut and paste." Or do you think hard about the details within the limited confines of your current understanding and come to some perceived deeper understanding? Are you willing and enthusiastic to communicate your answers and understanding? This is all a kind of first step. One might generally say that it is the

case that nothing is destroyed and no one is hurt through thinking and communicating, and maybe there is some validity to that. It is your habits of thinking, however, that result in actual actions—constructive or destructive—and consequences. You can look around you and see the absence of human intelligence in the consequences. And only you can take the opportunity to undertake "projects" in the broader sense that manifest human intelligence.

In conclusion, if I haven't communicated an inspiring challenge already, I will attempt it now: There are many people who say human intelligence does not exist. These people are mostly correct. The consequences essentially prove that assertion. Unfortunately, these people also push the importance and inevitibility of assertions like: "Nothing can be known with complete certainty," "Decisions must be made without full knowledge," and "Humans and the human mind are just machines." Not one of these people is capable of proving himself wrong.