Episode 6: The Human Sciences as an Area of Knowledge

<u>The Scope of the Human Sciences</u>:

Today we will be examining the human sciences as an area of knowledge. Let us begin by considering the question of scope. What do the human sciences cover? Well, we could start by making a list of the major disciplines in the area of the human sciences. These include anthropology, education, psychology, sociology, economics, geography, political science and criminology. And the goals within these subject areas? Well, they attempt to describe individual human behavior, as well as how groups act. Human sciences examine the social structures in society, how they change and how they affect individual interactions. In all cases, human sciences seek to describe, explain and possibly predict human behavior.

Next, let's inquire how human sciences differ from other areas of knowledge, beginning with the natural sciences, since both of these disciplines are labeled science. How do the human sciences differ from the natural sciences? And what we are going to find out is that in one sense, the human sciences are broader and in another sense they are narrower, and in a third sense they are different from the natural sciences. They are *broader* in the sense that they cover a wider range of interactions than just the natural world, that is, those things that are subject to the law of cause and effect. The human sciences are *narrower* in that they are limited to just one species on one planet and, finally, they are different from the natural sciences in they examine human interactions. It would seem that the human sciences' focus on humans is narrower than the natural science's focus on the natural world. However since the types of investigation natural science does is limited to cause and effect behavior in different aspects of the natural world--chemistry, biology, physics, etc, the scope of the human sciences is in fact greater, as it investigates the much larger number of patterns that do not strictly conform to the laws of cause and effect. However the human sciences do not focus strictly on quantification to the degree that the natural sciences do, and so they also share similarities with disciplines that are not based on quantification and measurement, such as history. Both human sciences and history involve tensions between unique events and a prediction of a general understanding or outcome. And, like history, human sciences is a storytelling that tries to make sense of events, putting them into pattern.

In conclusion, while we want to quantify things as much as possible, the degree of quantification will never be as precise as in the natural sciences and, more importantly, the human sciences are trying to do some things that natural sciences cannot do. This is because every individual society is unique, so it is unlikely you can generalize in the same manner as in the natural sciences. Human beings are linked in social networks that affect their behavior in a way that is complex and not easily predictable. Unlike understanding how physical forces affect objects in the natural world, we cannot directly observe most of the processes that human sciences seek to explain. Unlike physical phenomena people can change their behavior at will, rendering predictions useless. It is a much more complex scenario than in the

natural sciences. Human observers may inject their own values into interpretive events in a way that does not happen in the natural sciences. And, finally, human sciences have ethical issues that natural sciences do not face.

Methods of the Human Sciences:
The human sciences then are searching for different types of knowledge than the natural sciences, and so it is logical to assume that the methods they use will also differ. We must therefore investigate the methods used to examine human behavior. John Kemeny's book, *A Philosopher Looks Science*, highlights the issues of developing methods for understanding human behavior. He examines three significant categories within human sciences and the issues they present--how it forms theories, how it produces consequences and how it verifies predictions.

The Formation of Theories
The first category is the formation of theories and the first issue is what Kemeny refers to as a "handicap in motivation." Where the goal of natural sciences is to describe the structures of the physical world, the goal of the human sciences is more ambitious—it seeks not only to describe and explain human behavior, but also to change it. As a result, it begins its investigation at a relatively complex level of social interaction, rather than with the basics of human behavior. In its motivation to not just describe, but also to solve human problems it operates at a level of complexity that may be impossible to decipher. The second issue in theory formation is the difficulty of keeping emotional overtones out of the hypothesis. Since the human scientist is not just aiming at description, but also at solving a problems, it is likely they are more emotionally invested in their studies. Where natural science examines causal relationships that unfold, indifferent to the desires of the experimenters, in human sciences the desire for a solution may influence the investigation itself. A third issue has to do with the terminology of the human sciences. Where natural science generally has no accepted terminology, and so they invent words like "quark" or "neutrino," with a determinate meaning, human scientists must use everyday words that are already charged with meaning. This contributes to the ambiguity of its results. Finally, in the formation of theories, the biggest problem is the complexity of the subject matter. Where science begins with simple, covering laws and gradually develops more complex explanations from them, human sciences begin their investigations at the relatively complex level of human behavior. From the viewpoint of methodology, evidence indicates that it should probably start with more basic stages in their investigations.

Deducing Consequences
Kemeny argues that deducing consequences from hypotheses is probably the least thought-out area of the human sciences. The key issue is the relative number of data points in human science experiments. Managing data may be divided into three groups

- A small number of objects (500 or less) can be effectively analyzed using elementary mathematics

- A very large number of objects (say 5,000 to 5 billion) are also relatively easy to analyze using the power of calculus
- A medium ranges of number (500 to 5,000) is very problematic because we do not have mathematical tools to effectively process these numbers that are too large for elementary math and too small for calculus.

Unfortunately, this the data range commonly found in the human sciences, and Kemeny claims we lack the tools to accurately process this information. He observes: "*While many general laws may be proposed, we lack the mathematical acumen to solve them.*"

Verification

There are also issues with the verification of predictions in the human sciences. Such predictions require long spans of time that cannot be reproduced in an experimental setting. It is also difficult to reproduce human science results because of the possible changes introduced by human behavior, in contrast to laboratory experiments in natural science that are based solely on causal connections. Further, it is also difficult to verify a prediction about the future. The fact that you are carrying out this verification may alter the actions of the subject to either confirm or deny the claims. So, while it would indicate that we want to be objective, that is rigorous in our pursuit of the human sciences, the method that we use is probably going to differ a bit from the classic scientific method or we're just doing bad science.

<u>Laws in the Human Sciences</u>:

Well, what then are laws like in the human sciences? Again, we might best grasp this by using the natural sciences as a standard of comparison. In the natural sciences, understanding a phenomenon consists of subsuming a particular case under a general law or scientific theory, typically employing some kind of model that often allows one to relate events as cause and effect. For example, there is a well-known connection between the height above sea level and the temperature at which water boils. It can be stated as this general law:

"*an increase in altitude above sea level results in a decrease in the boiling point of water*."

If we now ask why an increase in altitude results in a lowering the boiling point, we obtain a more basic explanation:

"*an increased altitude above sea level results in a decrease in atmospheric pressure, and this results in the decrease in the boiling point of water*."

If we again ask why an increase in attitude results in lower atmospheric pressure, we obtain a further explanation:

"*an increase in altitude above sea level means less air above us, attracted by the earth's gravitation, which results in a decrease in atmospheric pressure which results in a decrease in the boiling point of water*," and so on.

Note that all the explanations are here are of the same kind. Each idea is linked the next one in a causal chain, and the more you question the process, the greater

number of prior scientific principles upon which the explanation rests may be uncovered; each question can be answered scientifically only by an explanation referring to another, more basic law. At some point, we reach the most fundamental laws like the law of universal gravitation, and there can be no further explanation except to say non- scientifically, that's because god or cosmology made the world that way.

How Laws Work in the Human Sciences

Now at first sight, the situation looks similar in the human sciences. There is, for example, a correlation noted in France around the turn of the nineteenth century by Emile Durkheim, between instability, (i.e., the rate which society is changing, be it for better, worse) and the rate of suicide. Simply put, the more unstable society was, the higher the suicide rate. As Durkheim formulated it, a rise in this instability which he termed *anomie* resulted in a rise of the suicide rate. However, if we now ask *why* greater lawlessness should result in a higher suicide rate, the explanation will not be in terms of further simpler, covering laws, as it was in the natural sciences. There is no direct causal link. Instead, it will be couched in terms of the behavior of *individuals* when society objectively shows more suicides. Each individual, for their own subjective reasons, commits suicide. Similar patterns can be found in other human sciences, such as economics: although prices, rates of interest and exchange, propensity to save, etc., are fundamental quantities in economic theories, the correlations which such theories claim are always the effects of *particular* decisions by individuals.

The picture we get the human sciences is something like this: Human Science posits a law—the increase in instability or *anomie* results in a rise in suicides. It is something we can use to predict behavior, which of course is what laws do. However, rather than a series of more basic covering laws to explain it (as in the example of water boiling), we have a series of unique individual actions: having lost his traditional job and unable to adapt to a forty hour workweek Robespierre feels he is failing his family, so he drowns himself. Madame Sarkozy cannot cope with her high social expectations and the disappointment of her marriage, so she takes poison. Chef Robuchon, dismayed by the number of McDonalds springing up on the Left Bank, sticks his head in the oven and turns on the gas, and so on. Thus, we discover that the laws of human science are largely statistical, meaning we can list the *number* of behaviors, but the *reasons* for each remain unique, and we cannot predict who will chose these actions. Such human science laws are vague and bendy, the evidence they produces is meaning-laden, subjective and not entirely predictable. Given the subjective nature of the evidence supporting human science laws, they are often qualified as explaining things under “ideal conditions” or “ceterius paribus—all things being equal.” The nature of human science laws simply follows from the different nature of the relationships which underlie the observed correlations. Causal relationships are underpinned by covering laws in the natural sciences and by the individual behavior of human beings in the human sciences.

Certainty in the Human Sciences:

Having seen how the methods used in the human sciences differ significantly from the natural sciences, we are now in a better position to understand what type of knowledge different human sciences produce and the degree of certainty that each attains. The human sciences may be laid out on a continuum. On one pole there are those human sciences that rely heavily on quantification, while on the opposite pole we find human sciences that rely more on qualitative knowledge. On one side of the continuum would be data based on empirical evidence while on the other end would be qualitative information based on meaning or what we called *Verstehen* approach. Let us outline the two different approaches. Economics is an example of the quantitative approach as it is based on the rational man theory. This is the idea that we all make self-interested rational choices that maximize our well being. Using this assumption, we measure inputs, outputs, and production to understand why people make the choices they do. On the other hand, psychology uses more of the *Verstehen* approach focusing on meaning. We attempt to understand what a situation means by trying to understand it from the inside, from the subject's point of view. It is obvious that these two very different approaches are going to give one very different types of knowledge with different degrees of certainty. Economics will provide reasonably accurate predictions that can be measured, assuming that participants always act rationally. Psychology on the other hand, with its focus on providing insights, explains how a person or group understands their place in the world and how these considerations shape their behavior. This information is qualitative and not always open to empirical confirmation. The unique thing about the human sciences is that they are successful in producing these very two different types of information, and the human sciences perhaps show the greatest diversity of any AoK. They straddle the divide between understanding the natural world and understanding our behavior and our role in that world.

The Ways of Knowing:

Finally, let us consider the ways of knowing in the human sciences. Discussing the ways of knowing in human science is tricky as there are notable differences in the approaches used by the different disciplines as outlined above. Here we will outline some of the highlights.

Perception

To some degree sense perception is a vital element to the human sciences as they all use some type of observation in their research. However, it is more vital and more problematic in the human sciences focused on meaning and understanding based on the *Verstehen* approach than in the more quantifiable disciplines, such as economics.

Reason

Basically, the same sort of distinction operates in the use of reason. The areas of human sciences all use reason, but they use it in a somewhat different fashion. In the quantifiable disciplines, such as economics, we use logical reasoning to analyze data

with the aim of arriving at a more or less definitive conclusion. Reason in psychology, sociology, or anthropology is of a different sort as we are trying to understand the meaning of a situation, so they develop a qualitative analysis that uses reason to understand much more than to verify or prove.

Imagination
Of course, there's no area of knowledge that does not use imagination. In all areas of human science imagination is used in the creation of hypotheses. Imagination, however, is likely more heavily used in the disciplines that rely on qualitative analysis, because they require us to piece together information in an effort to understand what it means, and this relies heavily on the imagination.

Language
Finally, we consider language as a way of knowing. Again, not surprisingly, language plays a central role in all areas of human sciences but perhaps a more crucial role however, in the qualitative disciplines. In a quantified human science, such economics, the effort of language is more less straightforward, to try to convey the information as clearly as possible. Nevertheless, the language of these disciplines is subject to the ambiguity of language, and this can be explained by the Sapir-Whorf hypothesis, which claims that language shapes the way we view the world. Qualitative human sciences, however, make use of surveys and other forms of data collection, where the use of language heavily influences the answers, the data that one receives and it therefore plays a critical role in developing knowledge.

Conclusion
The human sciences cover a broad array of topics, united by their common focus on describing, understanding, and predicting human behavior. This accounts for the differences in both types of knowledge each produces, as well as how they employ the ways of knowing. Thank you for listening to this podcast.