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| Science and Ideology |
| Science as we know it today is part of modernism. In modernity, explanations for events as arising from the actions of spirits, gods or other supernatural beings are displaced by rational scientific explanations based on empirical evidence derived from observation and experimentation, logical though and reasoning. Different views of the natural sciences: | **Positivist views**  | **Interpretivist (anti-positivist, interactionism) views** |
| **http://www.setsquaredpartnership.co.uk/assets/library/images/Null_Professor.jpgPOPPER (1935):** Suggests that science involves drawing up a specific question, idea or possible explanations (a hypothesis), which is based on previous research, observation and hunches, to test through research. For example, a researcher looking at official crime statistics might deduce that young people have a greater involvement in crime, leading to the formation of a hypothesis investigation and testing that this might be due to status frustration. Poppers features of the scientific method include:1. Hypothesis formation – forming ideas or informed guesses
2. Falsification – The aim of testing hypotheses against the evidence is to try to prove them wrong. (white swan)
3. The use of empirical evidence – no hypothesis can be regarded as a scientific hypothesis unless it is capable of being falsified.
4. Replication – Testing against empirical evidence is capable of being checked by other researchers who can replicate the research to verify the accuracy of the findings.
5. The accumulation of evidence – scientific knowledge is cumulative – that is, it builds up over time, through constant cycle of hypothesis formation, falsification, new hypothesis formation …until the hypothesis seems to be robust and accurate
6. Predication – through establishing cause and effect relationships rooted in evidence, predications of what will happen in the same circumstances in future can be established.
7. Theory formation – if the hypothesis is capable of being tested against evidence and cannot be shown to be false, then there are can be some confidence that the hypothesis is probably true.
8. Scrutiny – A scientific theory will be scrutinized by other scientists, and will stand only until some new evidence comes along to show the existing theory is false.

**KUHN (1962):** The influence of paradigms and ‘scientific revolutions’.Questions whether scientists really do in practise set out to collect evidence with the specific aim to trying to falsify their hypothesis, as Popper suggests they should. Kuhn argues that, on contrary, scientists work within paradigms – frameworks of scientific laws, concepts, theories, methods and assumptions – with which they approach the various puzzles they seek to understand and investigate.A paradigm acts like a pair of coloured lenses through which scientists look at the ‘puzzles’ they are investigating, and these influence what they think they should look for.Kuhn argues that most scientists in their experimental work rarely question the paradigm, and the paradigm act like blinkers which encourage scientists to try to fit observations into the paradigm rather than actually attempting to falsify their hypotheses as popper suggests.In other words, scientific paradigms change radically only when a series of discoveries cannot be explained by the dominant paradigm, and there is in effect a scientific crisis. Kuhn therefore argues science changes, not through gradual accumulation of research as hypotheses are tested and falsified as Popper suggests, but in dramatic leaps-when one scientific paradigm breaks down and another comes along to take its place.Because hypotheses and experiments to test them are fitted into the existing paradigm, it can be argued that scientific method and scientific knowledge are therefore socially constructed products.**KEAT & URRY (1975):** Realists such as Keat & Urry point out that prediction is often not as precise a process in natural science as Popper claims. Natural science has an advantage over social science in predictive powers when it can be study event in what Sayer calls closed systems, when all the potential causal factors are under the control of the researcher and precise measurements are possible, as in the closed environment of the laboratory experiment. However much natural scientific research, like most sociological research, takes place in much open systems whether these factors can’t be controlled, and predication is much more difficult and imprecise.(e.g. weather updates). In short, the claim that sociology is unscientific because it is unable to predict human behaviour, and shouldn’t aim to copy natural scientific methods as all the factors necessary to explain human behaviour are not observable. From the realist perspective, positivists and interpretivists both misunderstand what natural science is really like, and both positivists and interpretivists are using scientific approaches. Positivists are focusing on the observable, and interpretivists on the unobservable, but both are engaged in ‘doing science’Can sociology be scientific? There are disagreements within sociology as to how far the logic, methods and procedures of the natural sciences can be applied. The following points suggest how sociology cannot simply copy the approach and methodology of natural science.1. The problem of prediction- In natural science, it is possible to isolate causes in laboratory conditions therefore you can accurately predict what will happen in similar situations in the future. However human beings might behave differently in an experiment, knowing they are being observed so behaviour cannot be predicted with certainty. (e.g. not everyone facing the same set of circumstances will commit suicide)
2. Artificiality – Sociology wants to study society in its normal state, not in artificial conditions of a laboratory experiment.
3. Ethical issues – Human beings might well object to being boiled, weighed, wired, prodded with sticks, interrogated or observed in laboratories.
4. The Hawthorne effect – In natural science the presence of the scientist does not usually affect the behaviour of chemicals or objects
 | **Sociology can be a science:*** 1. Positivism is the view that the logic, methods and procedures of the natural sciences, as used in subjects like physics, chemistry and biology, can be applied to the study of society with little modification, and that human behaviour is a response to external forces – such as the agencies of socialization – in much the same way as events in the natural world. Durkeim argued clearly for a positivist approach in sociology, with his fundamental rule ‘consider social facts as things’
	2. Positivists believe that, just as there are causes for things in the natural world, so there are social facts that cause events in the social world. Durkeim said the aim of sociology should be the study of these social facts, which should be considered as things, like objects in the natural world and could in most cases be observed and measured quantitatively. (Social facts include things like income, crime rates, health etc)
	3. Positivists argue that sociology should be a science, and that this is made possible by following the scientific approach. The positivist view consists of the following features:
* Human behaviour is a response to observable social facts, and can be explained in terms of cause and effect relationships
* Direct observation and the use of quantitative, statistical methods of data collection should be used to study society.
* Research should focus in the search for the social causes of events in society.
* The focus of sociology is on the study of social institutions and the social structure as a whole, not on the individual.

Application: (Durkheim’s study on suicide)**Sociology should be a science:** • Produces knowledge that is certain. • Can generalise.• Establish laws of cause and effect.• Make predictions. • Can be replicated.• Gain data that is high in reliability.For example positivistic researchers at the home office claim to be able to generalise about crime trends and make predictions about patterns of victimisation because of their use of large scale social surveys. | **Sociology cannot be a science:**1. There are fundamental differences between the social world and the natural/physical world. Interpretivists claim that humans unlike natural matter do not react in a causal like way to external forces and their behaviour cannot be predicted with certainty. Humans **act** in terms of feelings, meanings and emotions. Individual social actors are also said to **interpret** events during social interaction and that this gives meaning to actions. Weber argued that this is a process of ‘understanding’ which he termed in German ‘vertehen’. This involves a recognition that people give meaning to their actions, and researchers can only understand these meanings if they try to put themselves in the position of the people whose actions they are trying to understand
2. There are ethical issues; humans are not likely to agree to being tested, experimented on, interrogated or observed in laboratories like rats in a cage!
3. It is not possible to follow scientific methodology. All research is inevitably subjective (value laden). For example the topic that is chosen for research, questions asked in interviews and the way that data is analysed. Also the ‘Hawthorne Effect’ may occur, where people’s behaviour changes when they know they are being studied.
4. Much of social life or alleged social facts are social constructions. For example it is difficult to get reliable statistics on health and crime because the data is dependent on members of public reporting their illness or crimes they observe (i.e. the statistics are social constructions).

Application:(Douglas study on suicide) **Sociology should not be a science:**1. Not desirable to be scientific. Therefore interpretivists favour the use of qualitative methods such as observation and informal interviews to find out about meanings, feelings and actions. Furthermore a non scientific approach generates data that is highly valid, insightful and achieves verstehen. For example interpretivist feminists Dobash and Dobash gained a true and detailed understanding of women’s experience of domestic violence by carrying out informal interviews which lasted for up to twelve hours. |