

What if there was a way we could measure moral culpability? One of the reasons morality is so abstract and subjective is because we lack the ability to measure our social interactions and quantify the negative and positive effects we have on each other. Epigenetics could provide a way for us to do exactly that. Epigenetics is the study of changes in gene expression not related to the actual DNA sequence itself, and instead has to do with how our genes are expressed as a result of a dynamic interaction between ourselves and the environment. Accordingly, the research currently being done in this field is exploring the environmental influences that cause epigenetic changes and whether or not these changes are trans-generationally heritable. The idea that epigenetics can provide that elusive, mechanistic link between our environmental experiences and our biological and physiological functioning is something that opens a whole host of new possibilities in terms of using epigenetics for gauging moral and legal culpability. For example, examination of the epigenetic effects of maternal alcohol and tobacco consumption during pregnancy can allow us to determine exactly how the children (and possibly great grandchildren) are affected by the mother's actions. With this precise information relating to which genes are being upregulated or downregulated for example, we can better gauge her moral and legal culpability for these adverse effects. A similar story can also be imagined for measuring impact on the victims of traumatic events or for measuring the impact on humans of environmental pollutants and toxins. In all these cases, epigenetics can supplement and shape our current system of law and order by providing a means to measure what we could only guess at with intuition before. We could see a paradigm shift as for the first time, instead of the law seeking to govern biotechnology, we could see biotechnology aiding in the implementation of the law itself.