We here apply a cultural evolution model on public opinion to moral issues in the United States. Surveys show a dramatic movement in public opinion on certain issues, such as gay rights, whereas public opinion has barely moved at all on other issues, such as abortion rights. What accounts for these differences in cultural evolutionary success of issue positions? Here we show that the long-term success of a position is strongly related to its advantage with respect to support in individualising (relating to care and fairness), as opposed to binding (e.g. authoritative), arguments. These results indicate that the speed and direction of the evolution of societal morality can be predicted by an analysis of arguments. The reason, we argue, is that individualising arguments influence both liberals and conservatives, whereas binding arguments tend to influence only conservatives and therefore have little impact on the population level. As predicted by this theory – but contrary to intuitions about ongoing political polarisation – we demonstrate that opinions trend in the same direction among both liberals and conservatives and that liberals are leading the trend. Our theory suggests a new understanding of why conservatives often feel as if the morals of society are moving away from them: liberals' refusal to be influenced by certain kinds of arguments allows them to move public opinion in their direction, leaving the conservatives in a constant state of catching up to the changes occurring.