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OPINION LEADERS, INDEPENDENCE, AND CONDORCET'S JURY THEOREM

ABSTRACT. Condorcet's Jury Theorem shows that on a dichotomous choice, individuals who all have the same competence above 0.5, can make collective decisions under majority rule with a competence that approaches 1 as either the size of the group or the individual competence goes up. The theorem assumes that the probability of each voter's being correct is independent of the probability of any other voter being correct. Contrary to several authors, the presence of mutual or common influences such as opinion leaders does not easily rule independence either in or out. Indeed, and this ought to be surprising, *under certain conditions deference to opinion leaders can improve individual competence without violating independence, and so can raise group competence as well.*

Keywords: Condorcet, Jury Theorem, voting, democracy, independence, judgments.

1. INTRODUCTION

Condorcet's Jury Theorem shows that on a dichotomous choice, individuals who all have the same competence (or probability of being correct) above 0.5, can make collective decisions under majority rule with a competence that approaches 1 (infallibility) as either the size of the group or the individual competence goes up.[1] For example, 250 voters at competence of 0.51 have a group competence of 0.62, while a group of 10 000 at the same competence have a group competence of 0.98. The theorem assumes that the chance that voters A and B will both be correct is the probability of A's being correct times the probability of B's being correct.[2] This is only warranted if A's being correct and B's being correct are independent events in the following sense: the probability of A's being correct = the probability of A's being correct *given* that B is correct. If this does not obtain – if, for example, A is sure to do whatever B does – then each could have a 0.5 chance of being correct, while the chance of A's being correct would be 1 given that B is correct. This makes the probability of both being correct 0.5 rather than $0.5 * 0.5 = 0.25$ as the independence assumption would have it.

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