

*The doctrinal paradox and the mixed-motivation problem*

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There are two seemingly unrelated paradoxes of democracy. The older one is the doctrinal paradox. For a comprehensive bibliography, see List 1995. The younger one is the mixed motivation problem introduced by Jonathan Wolff (1994) in this journal. What has gone unnoticed so far is that both of these paradoxes share a common structure.

In the doctrinal paradox, a body of voters is asked to consider two propositions A and B and it is agreed that a particular policy C will be implemented if and only if both A and B hold true. For instance, a firm will purchase a particular item of equipment if and only if it meets certain safety standards and is economically feasible (cf. Pettit: 272). On conclusion-based voting (CBV), each voter assesses whether the item meets the safety standards and whether it is economically feasible and votes accordingly on whether the item should be purchased. The equipment will be purchased if and only if a majority is in favour of the purchase. On premiss-based voting (PBV), each voter votes on whether the item meets the safety standards and on whether it is economically feasible and the item will be purchased if and only if there is a majority on both issues. For certain profiles of votes, the premiss-based and conclusion-based voting yield divergent results. In the profile in Table 1, the item will be purchased on premiss-based voting, because a majority believes that it meets the safety standards and a majority believes that it is economically feasible, whereas it will not be purchased on conclusion-based voting, because only a minority believe that it should be purchased.

In the mixed-motivation problem, there are Benthamite voters who vote for what they take to be in their self-interest and Rousseauian voters who vote for what they take to be conducive to the common good. Suppose that there is a motion on the table to make bars smoke-free. 40% of the population takes smoking in bars to be in their self-interest and 20% of the population takes it to be conducive to the common good. Furthermore, let us make the simplifying assumption that there is probabilistic independence between what is in a person's self-interest and what she takes to be conducive to the common good. Then Table 2 presents the distribution in the population:

Now suppose that everyone who takes it to be in their self-interest to have smoking in bars is a Benthamite voter and hence votes for smoking in bars. Everyone who takes it to be in their self-interest to have smoke-

Table 1: The doctrinal paradox

Safety?	Feasible?	Purchase?
Y	Y	Y
Y	N	N
N	Y	N
Majority: Y	Majority: Y	CBV: N PBV: Y

Table 2: The mixed-motivation problem

		Common good	
		Smoking in bars	Smoke-free bars
Self-interest	Smoking in bars	$0.4 \times 0.2 = 0.08$ (*)	$0.4 \times 0.8 = 0.32$ (*)
	Smoke-free bars	$0.6 \times 0.2 = 0.12$ (*)	$0.6 \times 0.8 = 0.48$

free bars is a Rousseauian voter and votes according to what they conceive to be conducive to the common good. Then all the starred boxes will vote for smoking in bars and so there will be a majority of 52% of the votes in favour of smoking in bars. What is paradoxical is that there is only a minority of 40% who takes smoking in bars to be in their self-interest and a minority of 20% who takes smoking in bars to be conducive to the common good. So voters with mixed Benthamite and Rousseauian motivations can reach a majority on an issue that is neither in the self-interest of a majority of the voters, nor considered to be conducive to the common good by a majority of the voters.

We will recast the mixed motivation problem as a doctrinal paradox with three voters. Each voter is asked to assess whether a smoke-free bar is in her self-interest and is conducive to the common good. Note that, given Wolff's motivational assumptions, all and only the voters in the non-starred box in Table 2 vote for smoke-free bars. Hence a voter will vote for implementing smoke-free bars if and only if she takes smoke-free bars to be in her self-interest *and* conducive to the common good. We now adopt the profile of the doctrinal paradox in Table 3.

In the mixed-motivation problem, some voters are Benthamite voters and some voters are Rousseauian voters. If they all had been Benthamite voters, then a majority would have voted yes on the first premiss, viz. that smoke-free bars are in their self-interest. If they all had been Rousseauian voters, then a majority would have voted yes on the second premiss, viz. that smoke-free bars are conducive to the common good. Let premiss-based voting require that there is both a majority for smoke-free bars on Benthamite grounds and a majority for smoke-free bars on Rousseauian grounds. Then the proposal would have passed on premiss-based voting. Given Wolff's characterization of the voters, all and only the voters who take smoke-free bars to be in their self-interest and conducive to the common good will vote for smoke-free bars. In effect, Wolff's voters vote the same way as conclusion-based voters who support the conclusion of implementing smoke-free bars if and only if both premisses hold. The

Table 3: The mixed motivation problem cast as a doctrinal paradox

Smoke-free bars are in my self-interest?	Smoke-free bars are conducive to the common good?	Implement smoke-free bars?
Y	Y	Y
Y	N	N
N	Y	N
Majority: Y	Majority: Y	CBV: N PBV: Y

outcome of such a conclusion-based vote is that a majority is opposed to smoke-free bars. The mixed-motivation problem has the structure of the doctrinal paradox, but at the same time it adds an interesting dimension to the paradox. It is a doctrinal paradox with premisses that have a central place in the literature on democracy, viz. a Benthamite concern for one's self-interest and a Rousseauian concern for the common good.

One might object that the mixed-motivation problem can only be cast in terms of the doctrinal paradox because of the restrictive assumptions in Wolff's example that are not essential to the problem. Wolff could give up the independence assumption. But note that the independence assumption has already been given up in the profile in Table 3. Wolff could give up the assumption that all and only people who take smoke-free bars to be in their self-interest and conducive to the common good vote for a motion to make bars smoke-free. But any such example of a mixed-motivation problem can be cast as a profile of votes in which a majority of voters takes smoke-free bars to be in their self-interest, a majority of voters takes smoke-free bars to be conducive to the common good, but these majorities do not overlap, i.e. some voters take smoke-free bars to be in their self-interest, but not conducive to the common good and vice versa. If the non-overlap is sufficiently great and a sufficient number of these voters decide to vote against the motion, then there is no majority support for the motion. And this preserves what is essential about the doctrinal paradox. So whereas a stylised example of a mixed-motivation problem can be analysed as a stylised doctrinal paradox, a not-so-stylised example can equally be analysed as a not-so-stylised doctrinal paradox.<sup>1</sup>

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*References*

- List, C. 2005. *Judgment Aggregation – a Bibliography on the Discursive Dilemma, the Doctrinal Paradox and Decisions on Multiple Propositions*. <http://personal.lse.ac.uk/LIST/doctrinalparadox.htm>.
- Pettit, P. 2001. Deliberative democracy and the discursive dilemma. *Philosophical Issues* 11 (supplement 1 to *Nous*, 35): 268–95.
- Wolff, J. 1994. Democratic voting and the mixed-motivation problem. *Analysis* 54: 193–96.