RICERCHE

The Imperfect Dialogic Democracy: Habermas' Discourse Principle and Experimental Studies on Collective Reasoning

Gabriele Giacomini[α]

█ **Abstract** Habermas believes that the foundation of democracy is to be found in the discourse principle. Also, some cognitive and experimental studies have suggested that democratic procedures can promote a debate between different opinions and ideas, thus improving the decision-making performance of public authorities. However, Habermas believes that, while, on the one hand, the democratic community is based on the premise that participants in the discourse collectively strive to find the best solutions, on the other, the democratic process allows citizens to irrationally misuse their political rights. If, therefore, reasoned decision and dialogue have an important role in the justification of democracy, but it is a limited role, we propose the idea of an imperfect dialogic democracy.
KEYWORDS: Jürgen Habermas; Collective Reasoning; Cognitive and Experimental Studies; Democracy; Decision Making

█ **Riassunto** *La democrazia dialogica imperfetta: il principio discorsivo di Habermas e gli studi sperimentali sul ragionamento collettivo* – Secondo Habermas il fondamento della democrazia risiede nel principio del discorso. Alcuni studi cognitivi e sperimentali suggeriscono che le procedure tipiche delle democrazia siano in grado di promuovere un dibattito fra opinioni e idee diverse, capace di migliorare le performances decisionali delle autorità pubbliche. Tuttavia, da un lato Habermas ritiene che la comunità democratica sia basata sulla presupposto che chi partecipa a un pubblico discorso si impegni a trovare la migliore soluzione, dall'altro le procedure democratiche non impediscono che i cittadini utilizzino in maniera irrazionale i loro diritti politici. Se le decisioni ragionate e il dialogo hanno un ruolo importante nella legittimazione della demcocrazia, un ruolo che tuttavia resta limitato, allora suggeriamo l'idea di una democrazia dialogica imperfetta.
PAROLE CHIAVE: Jürgen Habermas; Ragionamento collettivo; Studi cognitivi e sperimentali; Democrazia; Processi decisionali

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HABERMAS BELIEVES THAT THE FOUNDATION of democracy is to be found in the "discourse principle".[1] According to this principle, the only valid decisions and laws are those approved by citizens through their participation in rational discourses. Democracy should therefore be considered a discursive process with specific rules, based on the exchange of

[α]CeSEP - Centro Studi di Etica e Politica, Università degli Studi "Vita e Salute", via Olgettina, 58 - 20132 Milano (I)

E-mail: gabrielegiacomini@hotmail.it (✉)

opinions and aimed at defining a framework of legitimate laws, which enable citizens to feel free and equal.

However, the Habermasian model also demonstrates internal tensions, concerning the discourse principle and its practical use, i.e. its theory and practice.[2] On the one hand the democratic community, since its legitimacy is founded on dialogic procedures, is based on the premise that the participants in the discourse work hard to find the best solutions together. On the other hand, the democratic process allows citizens to irrationally misuse their right to communicate.

Modern cognitive and experimental sciences, especially recent studies on collective reasoning, have introduced new scientifically based arguments, which may shed light on some features of Habermas's theory.[3]

On the basis of these studies on collective reasoning, we will try to answer a series of questions: Is a practical use of the discourse principle possible for people? To what extent does the discourse principle remain in the ideal sphere or and to what extent can it be put into practice? Can the dialogic procedure really lead to an improvement in the performance of democracy?

To answer these questions, we shall first look at the characteristics of Habermas's dialogic theory of democracy, by analysing the relationship between the principle and its fulfilment, and between the normative level and descriptive level; we shall then examine cognitive and experimental studies on collective reasoning; finally we shall look at the results of experimental and cognitive studies in light of Habermasian theory, and consider to what extent the dialogic model could actually be put into practice by real people. At the end of these arguments, we will propose the idea of *imperfect* dialogic democracy.

Habermas's discourse principle

According to Habermas the idea of an argumentative and free dialogue is the starting point for the construction of a theory of de-

mocracy. This type of dialogue is understood to be inter-subjective and communicative and determines the basis and value of a democracy.

According to Habermas (*Theory of Communicative Action*), whoever reaches out to others with language immediately enters into a relationship governed by rules. In particular, an individual that addresses another individual with an act of communication tends to raise certain requirements of validity. For example, according to the standard of understandability, the speaker must choose an expression that could be understandable to the listener; according to the standard of truth, the speaker must intend to communicate content that is truthful; the standard of sincerity, instead, allows the listener to believe a speaker and have faith in them; according to the standard of correctness, the speaker must choose an expression that is in line with the norms and values of the listener.

This view of communication governed by rules can also have a public and political meaning. Applying the dialogic theory to democracy means that participants to a public decision must judge situations, debate and reach a conclusion assuming the validity of necessary norms or rules.[4]

A fundamental rule according to Habermas is, for example, that everyone has the right to put forward their own theses and defend them rationally with arguments. In his book *Between Facts and Norms*, Habermas identifies as the cornerstone of democracy the "discourse principle", according to which, the only valid norms are those which all potential interested parties would approve of if they were to participate in rational discourses. This idea can be explained by two points. Firstly, democracy is to be conceived as a discursive process (that is suitably regulated, institutionalised and proceduralised) based on an exchange of reasons. Secondly, for this exchange to take place, there need to be certain legitimate legal norms through which citizens can see themselves as being free and equal.[5]

In this idea of democracy, rights are a condition for the public autonomy of citi-

zens. Alongside *participation rights* to the active and passive electorate, emphasis is also given to *right of expression, freedom of the press and freedom of association.* The role of associations and movements is acknowledged and encouraged as a fundamental component in the formation of a free and critical opinion.

Moreover, it should be noted that a political decision cannot be the outcome of a process that individuals conduct on their own, but is rather the result of a discussion conducted by concrete actors who interact with one another, for two main reasons. First of all because the actual participation by everyone in a dialogue can guarantee that all arguments and interests are taken into consideration. Secondly because – as Mill wrote in *On Liberty*[6] – through collective discussion, it is possible for every individual to strengthen awareness of their own position, or understand they are mistaken and change their position.

The dialogic approach was also developed by other authors such as Cohen, Dryzek and Benhabib.[7] The main feature of these models is that the validity of rules and principles of democratic conduct depends on a selection procedure that searches for the rational consent of the individuals involved. For example, Benhabib believes that a dialogic and deliberative model could also be applied to contemporary societies characterised by severe social tensions.[8] In particular, Benhabib challenges the assumption according to which cultures are defined in a monolithic manner. According to Benhabib many theoretical debates, including the one concerning "strong" multiculturalism, where cultures are viewed as distinct pieces of mosaic, are dominated by this incorrect belief and this results in serious problems. Benhabib thinks it is possible to pursue an alternative approach, in which we can actually develop an understanding of cultures, through a discussion and dialogue that continually recreates and renegotiates the perceived boundaries between "us" and "them". Therefore, in a social and political context, the dialogic approach can be interpreted both as a theory of coexistence and a

measure of the validity of democratic decisions: laws are valid and are respected insofar as they are adopted following a procedure that satisfies the ideal criterion of rational consent by citizens.

The dialogic approach has the advantage of underscoring the role of reflection, debate and argumentation in democracy. The communication faculties of citizens represent the source of legitimation and the means by which democratic institutions are designed to help citizens exchange information, know-how and reasoning.

However, as already stated, on the one hand the democratic community, since its legitimacy is founded on dialogic procedures, is based on the premise that the participants in the discourse work hard to find the best solutions together. On the other hand, democracy also contains irrationality, and it is not clear whether the discourse principle can actually be achieved. In this regard, cognitive and experimental sciences can offer new inputs to reflect on the value of discourse in democracy, especially with regard to its practical feasibility.

Supporting the dialogic theory of democracy with empirical and experimental data means investigating whether the theory's assumption can be confirmed in a concrete and rigorous manner, i.e. whether they can be deemed relevant on a practical level.

Cognitive and experimental studies about collective reasoning

According to Labinaz,[9] "rationality" is a polysemic term, and there are various theories on the rationality of human conduct (from the ancient Aristotelian theory to the contemporary theory of rational choice). However, these theories always entail a clear distinction between rationality and irrationality, where the former is identified as a line of reasoning that respects logical and consistent rules.[10]

An important strand of studies on rationality has looked at the collective and collaborative – rather than the individual – condition,

where people enter into a discussion with one another. Recent research would appear to suggest that – given specific conditions– people do know how to debate in a dialogic and rational manner: they know how to use reasoning for evaluating situations and for producing arguments and reaching decisions.

The first studies which systematically analysed the production of arguments by people were constructed as follows: participants were asked to reflect on a given argument, like "would strengthening its military power significantly increase America's ability to influence global events?"[11] or "what are the causes of school drop-out?".[12] After being given a short time for reflection, individuals were asked to take a position with regard to these issues and express their conclusions.

The results of the studies were quite unsatisfactory with regard to the cognitive and reasoning skills of individuals. Indeed, people used superficial explanations instead of relying on concrete evidence to support their positions in a rigorous manner. However, it is likely that this result was exacerbated by the characteristics of the task: it is difficult "to measure the rationality" of an individual's considerations in this manner because the questions are too generic and broad, moreover, unlike what happens in a real debate, the experimenter was not really putting to the test the arguments of participants. On an everyday basis, however, an argument can be considered good if it is difficult to refute, so there is an incentive for an individual to strengthen their analysis. Since the individuals taking part in the experiment were not really put to the test, it was only reasonable that they should have been satisfied with superficial arguments.

On the basis of these considerations, it follows that individuals should be able to generate better arguments if they are involved in a real debate. This is what Kuhn and colleagues[13] observed in a later study: participants who had to debate a subject with other people demonstrated a significant improvement in the quality of the arguments they later used. Even Resnik and colleagues[14] created groups of three participants who were not in agreement on solutions to a specific problem. By analysing the debates, the researchers were impressed by the level of reasoning as participants succeeded in developing a framework for reasoning and complex arguments.

If people are genuinely capable of producing quality reasoning, and if these abilities are demonstrated more clearly in dialogic and argumentative contexts, then debates could move closer to Habermas's vision of citizens that are able to have discussions by presenting their own arguments and improving their reasoning thanks to discussions with other people.

There was more progress when individuals were given tasks the rationality of which was easy to measure. By this I mean logical tasks or, more generally, tasks for which a correct demonstrable response exists.[15] In the experiments including this type of task, participants generally start by resolving problems individually and later resolve the problems in groups of four or five people. Their performance is then compared with a control group of participants who performed the same tests, but did so individually.

For example, Moshman and Geil created an experimental setting in which collaborative reasoning turned out to be qualitatively superior to individual reasoning.[16] They were given a logical problem (involving the classic "four cards task"[17]) which was presented to 143 university students. Students were randomly assigned to one of the following three experimental conditions: (a) individual control condition (32 students); (b) condition in which students are in an interactive group (54 students, 10 groups of five or six members); (c) condition in which students first had to resolve the task individually and then performed it again in an interactive group (57 students, 10 groups of five or six members). Before starting the task, participants were told that the purpose of the study was to investigate their ability to find a solution

to a problem. In addition, they were encouraged to take the time they required to ensure that they were satisfied with the solution and they were told that they would be asked to justify their responses.

The results of the experiment speak clearly. In the individual condition, 9.4% of individuals selected the correct answer. The correct solution was instead identified by 70% of the groups in the collective condition and by 80% of the groups in the individual/interactive condition. Therefore, the choice of the correct combination was much more common in group situations as opposed to individual situations.

The recordings of discussions show that students regularly challenged one another to justify their choices and encouraged one another to consider consequences and alternatives. As illustrated above, the final choice mainly appeared to reflect a voluntary agreement based on a genuine analysis of the logical task. The recordings contained little evidence of passive conformity to the view of the majority or to the view of an apparent expert. Moreover, students regularly tried to reach an agreement by sharing opinions, doubts, ideas and reasoning.[18]

In particular, an in-depth analysis was conducted on the responses of participants who were first in the individual condition and then in the interactive condition. A change in their reasoning was considered positive if the initial response of an individual was incorrect and if the final group response was correct. Vice versa, the change was considered negative. The majority of individuals displayed a change in the correctness of their choices as a result of interaction with the group. Essentially all of these changes were positive: out of 57 students, 37 changed their choice after having collaborated with other members of the group; of these 37, 35 students displayed positive changes and only 2 students made negative changes.

The results of the individual/interactive condition suggest the reaching of a consensus which derives from dialogic discussion: after

taking part in the group discussion on the "four cards task", individuals normally refused their initial response in favour of the correct approach, so the best response was reached more successfully through collective reasoning as opposed to individual reasoning.

The dominant approach,[19] even in similar experiments, is that the best reasoning wins, i.e. when a group member understands the problem they are normally able to convince the other members that their solution is preferable.[20] This important dynamic can lead to significant improvements in the performance of a group that reflects in a dialogic manner compared to an individual reasoning on their own.

Discussion

In applying cognitive results obtained in experimental situations to the analysis and understanding of the political sphere, we need to exercise caution, as recommended by Eldar Shafir:[21] in the step from the controlled environment of an experimental study to reality we need to consider the fact that decision-making in politics is a complex process, which can be driven by functional or conflicting considerations, and which can therefore be motivated by multiple and heterogeneous criteria.

Taking into account these considerations of a prudential nature, I believe that the experimental results do however illustrate certain cognitive dynamics that are relevant for political philosophy like Habermas's, which is based on dialogic debate: I am not claiming that the limited and specific interaction between peers (such as that experienced by the participants in some experimental studies) can be generalised to all situations in which a group works together to tackle a cognitive task, but it is plausible that reiterating opportunities to take part in group reasoning could contribute to a more rational development of collective evaluations and decisions.

Indeed, we can think of various situations in which we can observe collective reasoning and in which there is confirmation of the

practical feasibility of dialogic democracy, in both the context of politics and policy.

The context of politics, i.e. the context of competition for political power and the dynamics of the electoral process, is certainly characterised by elements of irrationality, like the selfishness of the interested parties. However, even an author like Michael Walzer, who is generally critical of "German theories of collective action and ideal discourse", states that rational discussion and deliberation based on a collaborative dialogue has «a place, and an important one at that, in democratic politics».[22]

For example, even an activity with high "emotional" components like party membership affords a role to argument in terms of the most demanding problems and the most difficult challenges for the movement or party: party members discuss political issues even when they are collecting signatures or carrying out organisational activities, and even at this level, democracy manifests itself as a culture of argument. The dialogic principle requires – as indeed often occurs – that a party's platform is drafted by people that are informed, competent and committed to preparing proposals that are financially realistic and politically interesting and that above all, that these people meet and have discussions. In every democratic meeting there is no voting of alternatives unless these have been previously illustrated and debated, and in parliamentary debates, despite stark contrasts in their political positions, opposing speakers listen to one another and are at least in part willing to change their positions. Similarly, voters are never asked to vote without hearing lengthy discussions during the electoral campaign, and many citizens – despite manipulation and conditioning during elections – are committed to acquiring information by comparing the various sources, and try to pay attention to the arguments of the various candidates and make an effort to calculate their interests by evaluating the proposals made by the parties.[23]

The policy context relates instead to the process of production and implementation of public policies that are understood as measures passed by the people in power to manage public affairs. Public policies are not always consistent sequences guided by a well-defined view of the world: we commonly see elements of randomness, inconsistency and unforeseen effects.[24]

However, even in this context, we can identify various situations in which activities guided by collective reasoning have an important role to play. For example, just think of social movements or collective organisations that provide a Habermasian function alongside formal seats of power and support the creation and implementation of policies and services: they can indeed promote knowledge of specific requirements, facilitate the acknowledgement of a particular subject matter, provide information to policymakers with regard to certain areas and help to evaluate and correct policies.[25]

It is also worth mentioning the role of experts – people with specialist knowledge – in offering contributions of a dialogic type to the creation of policies. According to Panebianco,[26] politicians tend to involve scientists not to look for unselfish solutions based on "scientific evidence", but rather to use scientists as "advocates" in the search for scientific arguments that could help the viewpoints of their party prevail. This position, which is critical of so-called "social engineering", does however have, as Panebianco suggests, an "ironic" effect: given that in politics it is not possible to reach solutions that are scientifically *indisputable*, the role of scientists becomes that of offering a contribution within a context where things are *disputable*. The rivalry between experts in politics acquires a role that we can define as dialogic, in that it contributes to clarifying the various underlying positions and arguments, thus representing an «essential antidote to the selective deafness of human beings».[27] The knowledge of experts therefore has a value because, standing in contrast to various arguments, it helps to spread numerous ideas that can in-

crease awareness of problems and the quality of decisions.

In conclusion, some experimental studies suggest that the democratic procedures are able to promote a debate between different opinions and ideas, managing to improve decision-making performances in the public sphere.

However, in addition to reasoned dialogue, in a democracy there are also emotional and impulsive aspects. According to many psychologists, humans have a dual nature: they are rational as well as emotional and impulsive.[28] As far as politics is concerned, Walzer in *The Exclusions of Liberal Theory* has listed typical activities of a democracy that cannot be understood in theoretical models based on the exchange of reasons or argumentative processes. Walzer refers to political education when it is understood as indoctrination or activities such as mobilizations, rallies or demonstrations, where the political message overwhelms and even interrupts discourse and dialogue. Also, Caplan contends that voters are often irrational in the political sphere and have systematically biased ideas about political economy.[29]

It can therefore be argued that rational debate certainly has a relevant place in democracy and – as experimental studies on collective reasoning have shown – is possible in practice, however, its role cannot be generalized to the whole public sphere and cannot be considered independent of other impulsive and emotional dynamics. Collective decisions that are formed and elaborated through dialogue and argumentation exist and can actually improve the quality of political decisions, but this process remains limited and imperfect. Indeed, circumstances in which people do nothing but reflect and discuss issues (as is the case in the experiment by Moshman and Geil) are not always easy to find in the world of democratic politics.

If, therefore, evaluation and reasoned decision and dialogue have an important role in the justification of democracy, but it is a limited role, we propose the idea of *imperfect* dialogic democracy.[30]

Conclusive considerations

According to Bicchieri[31] and Ervas,[32] human beings follow social norms and standards precisely because their rationality is limited. A social and political procedure is adhered to not as a result of perfect rationality, but because our emotional and impulsive cognitive system erodes rationality. Indeed, individuals require norms as a benchmark to provide them with a source of guidance in complex interactions.

It should not therefore come as a surprise that democracy is made up of procedures that aim to govern individuals' limited rationality. If it is true that human beings have a rational as well as an emotional and impulsive nature,[33] then the principle of discourse on which the democratic system is based should aim to promote reasoned discussion as much as possible. In this way, rationality tempers the non-rational elements, limiting the spread of the latter and reducing the probability of these gaining the upper hand.

We can conclude that the discourse principle appears to be relevant at a practical level, i.e. it is feasible in practice: the possibility exists that, *at least in certain collective and political contexts*, it could generate dynamics that would improve our cognitive ability to evaluate and decide on public issues. This is therefore a normative principle that can be successfully applied and – in light of these experimental data – the internal tension between the discourse principle and its practical feasibility, i.e. between the normative and descriptive level, is clarified: promoting the exchange of reasons can actually increase the quality of democratic decisions. As was claimed by Giovanni Sartori,[34] democracy is a system of government which, if it is to function effectively, cannot ignore ideals and values. Moreover, even if reasoned decision and dialogue have an important role in democracies, this role is limited and it is our belief that real democracy is akin to an *imperfect* dialogic democracy.

Future research trajectories could involve defining in more detail democratic practices that are closer to Habermasian discourse,

while at the same time identifying situations that differ from the discourse model and remain dominated by passions, affections and irrationality.

▌ Notes

[1] See J. HABERMAS, *Theorie des kommunikativen Handelns*, Suhrkamp, Frankfurt a.M. 1981; J. HABERMAS, *Faktizität und Geltung*, Suhrkamp, Frankfurt a.M. 1992.

[2] See S. PETRUCCIANI, *Introduzione a Habermas*, Laterza, Roma-Bari 2000; S. PETRUCCIANI, *Democrazia*, Einaudi, Torino 2014.

[3] See G. GIACOMINI, *Psicodemocrazia. Quanto l'irrazionalità condiziona il discorso pubblico*, Mimesis, Milano-Udine 2016; G. GIACOMINI, *La democrazia dialogica imperfetta. Una proposta cognitivista sulla praticabilità dei principi democratici*, in: «Notizie di Politeia», vol. XXXII, n. 122, 2016, pp. 3-21.

[4] See V. OTTONELLI, *I principi procedurali della democrazia*, Il Mulino, Bologna 2012.

[5] See S. PETRUCCIANI, *Democrazia*, cit., pp. 138-146. It should be noted that ten years elapsed between the publication of *Theory of Communicative Action* (1981) and *Between Facts and Norms* (1992), as such the considerations on interpersonal communication were not applied to politics in an automatic and unequivocal manner. One of the most promising lines of inquiry in that period concerned the relationship between that which is factual and that which is justified, i.e. between the descriptive and ideal level. By pursuing this line of inquiry Habermas brings into play the relationship between the two levels (which this article also elaborates on), thus overcoming the traditional philosophical objections and conceptual rigidity distinguishing between facts and norms (see A. FERRARA, *Democrazia e giustizia nelle società complesse: per una lettura di Habermas*, in: «Filosofia e questioni pubbliche», vol. I, n. 2, 1996, pp. 67-117).

[6] See J.S. MILL, *On Liberty* (1859), Longman & Green, London 1864, III edition.

[7] See J. COHEN, *Deliberation and Democratic Legitimacy*, in: A. HAMLIN, P. PETIT (eds.), *The Good Polity: Normative Analysis of the State*, Blackwell, New York 1989, pp. 17-39; J.S. DRYZEK, *Discursive Democracy: Politics, Policy, and Political Science*, Cambridge University Press, Cambridge 1990; S. BENHABIB, *Critique, Norm and Utopia. A Study of the Foundations of Critical Theory*, Columbia University Press, New York 1986; S. BENHABIB, *Deliberative Rationality and Models of Democracy Legitimacy*, in: «Constellations», vol. I, n. 1, 1994, pp. 26-52.

[8] See S. BENHABIB, *The Claims of Culture*, Princeton University Press, Princeton 2002.

[9] See P. LABINAZ, *La razionalità*, Carocci, Roma 2013.

[10] In *Reasoning, Argumentation and Rationality* Labinaz describes the state of the art in psychological studies on reasoning and in argumentation theory, and then turn to today's most influential argumentative approaches to reasoning. See P. LABINAZ, *Reasoning, Argumentation and Rationality*, in: «Etica & Politica», vol. XVI, n. 2, 2014, pp. 576-594.

[11] See D.N. PERKINS, *Postprimary Education has Little Impact on Informal Reasoning*, in: «Journal of Educational Psychology», vol. LXXVII, n. 5, 1985, pp. 562-571.

[12] See D. KUHN, *The Skills of Arguments*, Cambridge University Press, Cambridge 1991.

[13] See D. KUHN, V.F. SHAW, M. FELTON, *Effects of Dyadic Interaction on Argumentative Reasoning*, in: «Cognition and Instruction», vol. XV, n. 3, 1997, pp. 287-315.

[14] See L.B. RESNICK, M. SALMON, C.M. ZEITZ, S.H. WATHEN, M. HOLOWCHAK, *Reasoning in Conversation*, in: «Cognition and Instruction», vol. XI, n. 3-4, 1993, pp. 347-364.

[15] See P.R. LAUGHLIN, A.L. ELLIS, *Demonstrability and Social Combination Processes on Mathematical Intellective Tasks*, in: «Journal of Experimental Social Psychology», vol. XXII, n. 3, 1986, pp. 177-189.

[16] See D. MOSHMAN, M. GEIL, *Collaborative Reasoning: Evidence for Collective Rationality*, in: «Thinking and Reasoning», vol. IV, n. 3, 1998, pp. 231-248; M. AUGUSTINOVA, *Falsification Cueing in Collective Reasoning: Example of the Wason Selection Task*, in: «European Journal of Social Psychology», vol. XXXVIII, n. 5, 2008, pp. 770-785; B. MACIEJOVSKY, D.V. BUDESCU, *Collective Induction without Cooperation? Learning and Knowledge Transfer in Cooperative Groups and Competitive Actions*, in: «Journal of Personality and Social Psychology», vol. XCII, n. 5, 2007, pp. 854-870.

[17] The four card task is a logic puzzle devised by Wason (see P.C. WASON, *Reasoning*, in: B. FOSS (ed.), *New Horizons in Psychology*, Penguin, Harmondsworth 1966, pp. 135-151; P.C. WASON,

Reasoning about a Rule, in: «Quarterly Journal of Experimental Psychology», vol. XX, n. 3, 1968, pp. 273-281; P.C. WASON, P. JOHNSON-LAIRD, *The Psychology of Reasoning: Structure and Content*, Harvard University Press, Cambridge (MA) 1972). It is one of the most repeated tests in the study of logical reasoning. An example of the puzzle is: "You are shown a set of four cards placed on a table, each of which has a number on one side and a colored patch on the other side. The visible faces of the cards show 3, 8, red and brown. Which card(s) must you turn over in order to test the truth of the proposition that if a card shows an even number on one face, then its opposite face is red?". A response that identifies a card that need not be inverted, or that fails to identify a card that needs to be inverted, is incorrect. The correct response is to turn over the 8 and the brown card. The rule was "If the card shows an even number on one face, then its opposite face is red". Only a card with both an even number on one face and something other than red on the other face can invalidate this rule: if the 3 card is red (or brown), that doesn't violate the rule (the rule makes no claims about odd numbers); if the 8 card is not red, it violates the rule; if the red card is odd (or even), that doesn't violate the rule (the red color is not exclusive to even numbers); if the brown card is even, it violates the rule.

[18] See D. MOSHMAN, M. GEIL, *Collaborative Reasoning*, cit.; A. TROGNON, *How Does the Process of Interaction Work When Two Interlocutors Try to Resolve a Logical Problem?*, in: «Cognition and Instruction», vol. XI, n. 3-4, 1993, pp. 325-345; G.E. LITTLEPAGE, A.L. MUELLER, *Recognition and Utilization of Expertise in Problem-solving Groups: Expert Characteristics and Behavior*, in: «Group Dynamics», vol. I, n. 4, 1997, pp. 324-328.

[19] See J.H. DAVIS, *Group Decisions and Social Interactions: A Theory of Social Decision Schemes*, in: «Psychological Review», vol. LXXX, n. 2, 1973, pp. 97-125.

[20] See A.S. BLINDER, J. MORGAN, *Are two Heads better than One? An Experimental Analysis of Group vs. Individual Decision Making*, National Bureau of Economic Research Working Paper, Princeton, New Jersey 2000, p. 7909; S.E. BONNER, G.B. SPRINKLE, *The Effects of Monetary Incentives on Effort and Task Performance: Theories, Evidence, and a Framework for Research*, in: «Accounting, Organizations and Society», vol. XXVII, n. 4-5, 2002, pp.

303-345; P.R. LAUGHLIN, B.L. BONNER, A.G. MINER, *Groups Perform better than the Best Individuals on Letters-to-numbers Problems*, in: «Organizational Behavior and Human Decision Processes», vol. LXXXVIII, n. 2, 2002, pp. 605-620; P.R. LAUGHLIN, A.L. ELLIS, *Demonstrability and Social Combination Processes on Mathematical Intellective Tasks*, cit.; P.R. LAUGHLIN, E.C. HATCH, J.S. SILVER, L. BOH, *Groups Perform better than the Best Individuals on Letters-to-numbers Problems: Effects of Group Size*, in: «Journal of Personality and Social Psychology», vol. XC, n. 4, 2006, pp. 644-651; P.R. LAUGHLIN, M.L. ZANDER, E.M. KNIEVEL, T.S. TAN, *Groups Perform better than the Best Individuals on Letters-to-numbers Problems: Informative Equations and Effective Reasoning*, in: «Journal of Personality and Social Psychology», vol. LXXXV, vol. 4, 2003, pp. 684-694; L.K. MICHAELSEN, W.E. WATSON, R.H. BLACK, *A Realistic Test of Individual versus Group Consensus Decision Making*, in: «Journal of Applied Psychology», vol. LXXIV, n. 5, 1989, pp. 834-839; M.F. STASSON, T. KAMEDA, C.D. PARKS, S.K. ZIMMERMAN, J.H. DAVIS, *Effects of Assigned Group Consensus Requirement on Group Problem Solving and Group Members' Learning*, in: «Social Psychology Quarterly», vol. LIV, n. 1, 1991, pp. 25-35; R.S. TINDALE, S. SHEFFEY, *Shared Information, Cognitive load, and Group Memory*, in: «Group Processes and Intergroup Relations», vol. V, n. 1, 2002, pp. 5-18.

[21] See E. SHAFIR, *Prospect Theory and Political Analysis: A Psychological Perspective*, in: «Political Psychology», vol. XIII, n. 2, 1992, pp. 311-322.

[22] M. WALZER, *The Exclusions of Liberal Theory*, Fischer, Frankfurt a.M. 1999, p. 56.

[23] *Ivi*, p. 56-60.

[24] See B. DENTE, *Le decisioni di policy*, Il Mulino, Bologna 2011, pp. 25-50.

[25] See M. LA BELLA, P. SANTORO (a cura di), *Questioni e forme della cittadinanza*, Franco Angeli, Milano 2011, pp. 93-94.

[26] See A. PANEBIANCO, *L'analisi della politica*, Il Mulino, Bologna 1989, pp. 563-596.

[27] D. COLLINGRIDGE, C. REEVE, *Science Speaks to Power. The Role of Experts in Policy Making*, Pinter, London 1986, p. 30.

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[29] See B. CAPLAN, *The Myth of the Rational Voter*,

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30 See G. GIACOMINI, *Psicodemocrazia*, cit; G. GIACOMINI, *La democrazia dialogica imperfetta*, cit.
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