# Deservingness versus values in public opinion on welfare: The automaticity of the deservingness heuristic

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**Abstract.** Public attitudes towards welfare policy are often explained by political values and perceptions of deservingness of welfare recipients. This article addresses how the impact of values and perceptions varies depending on the contextual information that citizens have available when forming welfare opinions. It is argued that whenever citizens face deservingness-relevant cues in public debate or the media, a psychological 'deservingness heuristic' is triggered prompting individuals spontaneously to think about welfare policy in terms of who deserves help. This is an automatic process, equally influential among the least and the most politically sophisticated. Moreover, when clear deservingness cues are present, the impact of values on opinions vanishes. These arguments are supported by data from two novel experimental studies embedded in separate nationwide opinion surveys. The findings revise conventional wisdom of how values and heuristics influence public opinion and have major implications for understanding dynamics in aggregate welfare opinion and attempts from political elites to manipulate public opinion.

Citizens' attitudes toward welfare state policies attract a considerable amount of interest from scholars and policy makers alike. Welfare policies consume a large part of public spending in most advanced industrialised countries, and at their core, welfare policies are about balancing equality and freedom as well as the degree of state intervention in the market economy and its outcome (Kumlin 2007: 362). As such, how the welfare state is arranged might have a large influence on how many citizens live their lives. Given this impact, it is no wonder that a large number of scholars have studied public opinion concerning welfare policies.

Previous work has found that individuals' support for social welfare policies to a considerable extent can be explained by their general political values (Blekesaune & Quadagno 2003; Feldman & Steenbergen 2001) and perceptions of welfare recipients' *deservingness*, essentially whether they are perceived as being lazy or unlucky (Gilens 1999; Van Oorschot 2000). While both values and perceptions clearly seem to be important for understanding welfare opinions under some circumstances, we still have a limited understanding of what these circumstances are. As Feldman (2003: 489) observes:

'Researchers . . . have not devoted enough attention to the conditions under which values will be strongly related to political attitudes.' Likewise, perceptions of deservingness might vary considerably depending on what specific information about recipients of a given welfare programme citizens might consider; yet, extant research has rarely addressed the deeper psychological dynamics involved when such perceptions are formed.

Perhaps most importantly, we know virtually nothing about how values and perceptions might interact in shaping citizens' welfare opinions. Consequently, we have a sparse understanding of how contextual information might alter the considerations underlying welfare opinions. Will citizens across the political spectrum be susceptible to influence from specific information in the context of opinion formation? Or will they be just minimally affected, relying instead on their general values?

In this article, we develop a theoretical account of how political values and perceptions of deservingness interact in shaping individuals' support for welfare policy. Studies in psychology suggest that deservingness considerations reflect deep and automatic psychological processes. Given this, we predict that the 'deservingness heuristic' spontaneously guides opinion formation whenever informational cues to the deservingness of welfare recipients are available. Importantly, from the automatic nature of the heuristic, we infer, first, that the impact of values decreases dramatically in the presence of deservingness-relevant cues, and second, that all citizens, regardless of their level of political sophistication, rely on perceptions of deservingness. We test these arguments with a unique experimental design embedded in two different nationwide public opinion surveys. We find strong support for our argument that perceptions of deservingness are a fundamental and automatic component of welfare support, for the expected interactions of values and deservingness perceptions, and for the underlying psychological mechanisms we propose. Our findings are important and revise conventional wisdom in political science about the roles heuristics and values play in public opinion formation. As we discuss, these findings also have major implications for how the mass media and political elites can influence public support for welfare policies.

## The deservingness heuristic and its automaticity

Political values have been shown to be one of the main sources of public opinion on welfare policies. For example, egalitarian and humanitarian values and left-wing ideology have been found to be associated with more support for welfare state policies, while the values of individualism and right-wing ideology are associated with less favourable welfare opinions (Andress & Heien

2001; Blekesaune & Quadagno 2003; Feldman & Steenbergen 2001; Feldman & Zaller 1992; Gilens 1999). Values are general and abstract beliefs that 'pertain to desirable end states and behaviors' (Schwartz 1992: 4); hence, values can lead citizens to support welfare policies that are consistent with their general political outlook and oppose policies that are not. However, while values indeed can be an important ingredient in welfare opinions to some people, a number of researchers have argued that using values in opinion formation often requires substantive political knowledge. Specifically, to apply a value individuals are required to know enough to see the connection between the value and the specific policy in question (Alvarez & Brehm 2002; Basinger & Lavine 2005; Sniderman et al. 1991; Zaller 1992; but see Goren 2004).

What do citizens do without such knowledge? The standard answer in recent public opinion research is that they rely on cognitive shortcuts or 'heuristics'. Heuristics are decision rules that produce quick judgments based on limited information and, hence, allow for opinion formation even when substantive information is absent (Lau & Redlawsk 2006; Popkin 1991; Sniderman et al. 1991). For example, a voter can choose how to vote in an election based on endorsements by interest groups or political parties rather than by carefully processing the alternatives (Hobolt 2007; Lupia 1994). Because heuristics guide citizens in seeking out a narrow subset of information and, on this basis, construct an opinion, the standard perspective holds that heuristics enable citizens to, for example, produce value-consistent opinions even when they lack the motivation or knowledge necessary to connect values and policies. As Druckman et al. (2009: 9) summarise this recent perspective, 'the thrust of this work has been to construe heuristics as the next-best thing to fully rational democratic decision-making'.

In the domain of welfare, the so-called 'desert' or 'deservingness' heuristic seems to be particularly important (Gilens 1999; Larsen 2006; Van Oorschot 2000; Sniderman et al. 1991). The deservingness heuristic prompts citizens to consider whether recipients *deserve* their welfare benefits and premise their opinion on this evaluation. If the recipients are perceived as deserving, welfare is supported. If the recipients are perceived as undeserving, welfare is rejected. Specifically, the deservingness heuristic directs attention to the cause of welfare: Is it the recipients' own fault or not? If welfare recipients are seen as lazy and their need is internally caused, they are perceived as undeserving.[1] For example, Gilens (1999: 169) finds that the primary determinant of white Americans' opposition to welfare is their perception of blacks as lazy (i.e., that they have not tried hard enough themselves to deserve welfare), not that blacks are seen as violent or unintelligent. In forming the relevant perceptions, the deservingness heuristic seems to rely on a large number of more specific

cues (for a review, see Van Oorschot 2000). Most importantly, individuals attend to recipients' degree of control and level of reciprocity. If a recipient is in control of his own situation but still requests help, it suggests that he or she is intentionally trying to evade making an effort. Conversely, if a recipient on previous occasions has demonstrated a willingness to contribute, it suggests that he or she is in general willing to make an effort and, hence, is not trying to evade doing so in the particular situation.

In the standard perspective, the deservingness heuristic would provide a shortcut to value-consistent opinions. In line with this, studies from the United States have documented that conservatives perceive a need for welfare to stem from laziness, while liberals tend to see it as caused by external circumstances (Skitka & Tetlock 1992; Skitka et al. 2002) and, hence, citizens would be able to produce value-consistent opinions (i.e., support for welfare in the case of liberals) simply by relying on their perception of welfare recipients. If heuristics are indeed used to offset differences in political sophistication, the implication is that such use of the deservingness heuristic should be most frequent among the least politically aware. Yet an increasing number of scholars have begun questioning the standard account (Bartels 1996; Druckman et al. 2009; Kuklinski & Quirk 2000; Petersen 2009). This revisionist line of argument contends that heuristics cannot be assumed to sustain reflective decision making because a number of heuristics engage quite automatic psychological processes that are ill-adapted to democratic politics.

In psychology, automatic processes are characterised as unintentional, occurring outside of awareness, uncontrollable and/or effortless to employ (Bargh 1994). Judged by these criteria, the deservingness heuristic does indeed seem to be automatic (see also Feather 2006; Weiner 1995). Hence, considerations of deservingness are far from confined to the domain of welfare politics. Rather, individuals spontaneously judge the intentions of needy individuals based on control- and reciprocity-related cues in all kinds of social interactions – from lending exam notes to fellow students to helping a drunk in the subway (Weiner 1995). More importantly, studies in neuroscience reveal that the human brain contains dedicated systems for processing the intentions of others and these play important roles in decisions about help-giving (for a review, see Petersen et al. 2009).[2] Consistent with the notion of automaticity, these systems, in part, operate below the surface of consciousness and individuals often find it hard to explain why they help when they help (Zak 2007).

Following the revisionists' account of heuristics in politics, we suggest that – in the case of the deservingness heuristic at least – this automaticity has important implications running counter to the traditional perspective on heuristics. First, if the deservingness heuristic is automatic, it suggests that it is not evoked to compensate for difficulties in achieving a value-based opinion;

execution of automaticity processes lies beyond intentional control. Instead, whenever citizens face deservingness-relevant cues (e.g., control or reciprocity cues), the heuristic should be triggered and prompt citizens spontaneously to think about welfare politics in terms of deservingness. Thus, we contend that it is not so much lack of substantive knowledge that causes citizens to rely on the deservingness heuristic, but rather the mere availability of cues that *fit* the heuristic (Petersen 2009). The implication is that the opinions of citizens, regardless of their level of political knowledge, should be highly sensitive to contextual information indicating that welfare recipients are either lazy or just unlucky.

Second, rather than sustaining value-consistent opinions, the activation of the deservingness heuristic could actively reduce the role of political values in opinion formation. Hence, in the face of deservingness-relevant cues, the automaticity of the deservingness heuristic implies that citizens instantaneously are able to make welfare judgments. In such cases, it is plausible that citizens would not feel a need to consider more cognitively demanding factors such as their values (see also Petersen 2009). In this sense, we argue, a strong activation of the deservingness heuristic could *crowd out* values from opinion formation. The conditioning factor in this regard seems to be the ambiguity of the available information as this would condition the activation of the heuristic, and hence the need for consulting other lines of reasoning. Specifically, whenever unambiguous cues to the deservingness of recipients are present, we expect the deservingness heuristic to reduce the effect of values on opinion formation. In line with this, research in psychology shows that when contextual information is sparse or ambiguous – and, for example, does not provide clear cues to judge deservingness – individuals form opinions in light of their pre-existing values. In such cases, different individuals come to different conclusions. In contrast, in the face of unambiguous cues, individuals, across different values and general attitudes, form similar opinions (see Kunda & Sherman-Williams 1993; Kunda & Thagard 1996). Instead of helping citizens who have a hard time connecting their egalitarian values or conservative ideology to specific welfare policies, an automatic deservingness heuristic would actively draw citizens away from such general principles and towards context-specific information.

In sum, on the basis of the proposed automaticity of the deservingness heuristic, we argue that this heuristic, first, is not employed to compensate for a lack of knowledge but rather is spontaneously triggered in the face of deservingness-relevant cues, and second, that – whenever these cues are clear enough – they alleviate the need to consult other lines of reasoning thereby crowding out political values from opinion formation. These expectations not only go directly against the standard notions of the role of heuristics in politics, but also have important implications for how citizens should respond to elite

communications. In politics, most information is not sought out by citizens themselves, but is rather provided and *framed* by political elites. In this respect, to which we will return in the conclusion, the automatic operation of the deservingness heuristic opens opportunities for manipulation. We now turn to empirical data and, in the next section, provide an overview of the studies we conducted to validate our account of the automaticity of the deservingness heuristic.

## Overview of studies

In testing how the deservingness heuristic structures citizens' welfare opinions, we rely on two separate studies. Both studies were conducted in Denmark. In each of them, respondents were asked about their support for a specific welfare policy, after they had been experimentally provided with one of four short descriptions of a specific welfare recipient. These descriptions were designed subtly to vary the perceived deservingness of the recipient as well as the ambiguity of the specific information provided. The major advantage of the experimental method is that it maximises control and hence enables us to make causal inferences. By randomly assigning respondents to experimental conditions (i.e., to a particular description of a specific welfare recipient), we make sure differences in values, interests and other experiences cancel out between the groups and thus are controlled. We can therefore make inferences regarding whether variation in welfare recipients' deservingness influences citizens' welfare opinions and to what extent with a high degree of confidence.[3]

We focus exclusively on one welfare programme – social welfare benefits – and vary only the description of the specific welfare recipients. In Denmark, social welfare benefits are a means-tested programme designed to help people with no alternative sources of income. Importantly, recipients of social welfare have the right and obligation to take part in job activation programmes such as job training. In both studies, our main dependent variable is opinion on a specific policy to tighten activation requirements for recipients of social welfare benefits. We use this policy to test our argument because one of the ideas behind job activation is that welfare recipients are required to do something in return for the social welfare benefits (Loftager 2004: 93–95). By focusing on whether these requirements should be made stricter for the recipients in question, we are asking whether some recipients should do more in return for their welfare benefits than others – that is, whether some are more deserving than others. To the extent the deservingness heuristic in fact informs the respondents' opinions we should expect significant discrimination between recipients on the basis of deservingness-relevant cues. In this way, by experi-

mentally providing respondents with information on specific recipients, we can investigate the role of the deservingness heuristic in welfare opinion formation.

Our core argument is that the deservingness heuristic operates in an automatic fashion and thus, as soon as specific cues are available, will influence opinion formation across different levels of political sophistication and regardless of individuals' values. Our two studies are specifically designed to test different aspects of this argument. In Study 1, we investigate the overall effect of the deservingness heuristic on welfare opinion, and how it interacts with values and political sophistication. This analysis allows us to contrast the operations of the deservingness heuristic with the conventional perspective on heuristics. In Study 2, we test the proposed psychological processes underlying these effects and, hence, directly demonstrate the automaticity of the deservingness heuristic.

## Study 1

Study 1 is designed to illuminate how the deservingness heuristic works compared to existing accounts emphasizing the role of individuals' political values and political sophistication. Thus, our aim is to demonstrate three important implications of the automaticity of the deservingness heuristic. First, how citizens spontaneously rely on the deservingness heuristic in their opinion formation. Second, how the deservingness heuristic is not used to compensate for a lack of substantive political knowledge and, hence, its use is unaffected by political knowledge. And third, how the deservingness heuristic crowds out value-based reasoning in the face of unambiguous deservingness cues.

### Design and measures

Study 1 is based on data from a unique experiment embedded in a nationally representative opinion survey. The survey was conducted in the form of computer-assisted telephone interviews (CATI) with a random sample of 2,043 adult Danish citizens in the spring of 2006.[4] The minimum response rate was 63 per cent (AAPOR RR1; see http://www.aapor.org), and the respondent-level cooperation rate was 76 per cent (AAPOR COOP3).

In the experiment, respondents were randomly assigned one of four experimental conditions, each depicting a welfare recipient: 'A young man'; 'A woman in her fifties'; 'A woman in her fifties with a work-related injury'; or 'An aged man who has been on the labour market all his life'.[5] Specifically, respondents were asked: 'Imagine a [recipient] who receives social welfare benefits.

Do you agree or disagree that the activation requirements should be made stricter for him (her)?' Answers were obtained on a five-point Likert scale ranging from 'Agree completely' through 'Disagree completely' and recoded to vary between 0 and 1 to form our dependent variable Welfare Opinion, where higher values indicate less support for restricting activation requirements (i.e., higher values indicate more pro-welfare attitude).

Two concerns guided the formulations of these short descriptions. First, rather than explicitly describing recipients as morally worthy or not, the descriptions provide highly subtle cues to the deservingness of the recipient. If our argument is correct, however, the deservingness heuristic should easily process these cues and influence opinion accordingly. Specifically, we expect the respondents to be most favourable towards tightening the activation requirements for the young man. First, he should be able to find a job more easily and hence be in more control over his employment situation. Second, given his young age, it is less likely that he has previously had a job and thus he has not yet proven his willingness to contribute to society. We expect the woman with a work-related injury and the aged man to be most deserving, as both can be perceived as being without control over their employment situation. Furthermore, we mention explicitly that the aged man has been on the labour market for years. Similarly, the woman's work-related injury suggests that she too has been employed for a period of time. These recipients have thus proven that they in fact are willing to work and contribute to society. We expect the woman in her fifties, who is not described further, to fall somewhere between the two poles. Her age implies that she has contributed to society previously, but the respondents are not provided with any sound reason for her current lack of employment.

The second concern underlying our experimental stimuli was to ensure that the four conditions differed in the amount and ambiguity of information provided. Accordingly, the two first conditions – a young man and a woman in her fifties – provide information only about the recipient's age (and in the case of the young man, the exact age is in itself open to interpretation). In contrast, the two other conditions provide information in addition to the age of the recipient (i.e., a work-related injury or that the aged man has been on the labour marked all his life). Thus, in the latter conditions respondents should have less ambiguous information available to assess whether the welfare recipient in question is deserving or not, which means that less interpretation is needed. To the extent our argument is valid, we should expect the more detailed and unambiguous information about the woman with a work-related injury or the aged man with many years on the labour market to activate the deservingness heuristic more strongly and, in turn, crowd out values from the opinion formation process.

We also measured individuals' political values and political sophistication. To measure values we focused on respondents' degree of egalitarianism, measured by an index of three Likert format questions answered on a five-point scale: 'High incomes should be taxed more than is currently the case'; 'The state has too little control over the business world'; and 'In politics, one should strive to assure the same economic conditions for everyone, regardless of education and employment' (alpha = 0.54). The Egalitarianism variable was rescaled to range from 0 through 1 with higher values indicating a more egalitarian position. To measure respondents' level of political sophistication we relied on a widely used approach (Goren 2004; Zaller 1992) and constructed a scale based on respondents' answers to six factual questions about politics (alpha = 0.64).[6] The Political Sophistication variable counts the number of correct answers and was recoded to range from 0 to 1 with higher values indicating higher sophistication.

It should be noted that a number of our analyses require the use of interactive models. Following Kam & Franzese (2007: 49–50), we simply use the t-test associated with the interactive term to test for the existence of interactions. In the cases where we interact categorical variables and scales (i.e., include an interaction term for each category other than the reference category), we report these individual t-tests along with F-tests for the overall reduction in the sum of squared errors from including the full set of interaction terms.

*Do citizens discriminate on the basis of deservingness cues?*

Given the proposed existence of an automated deservingness heuristic, we expect people to spontaneously consider deservingness-relevant cues when forming welfare opinions. In the context of our experiment, people should discriminate between the specific welfare recipients depending on the cues provided. Specifically, we expect the respondents to be most favourable towards the aged man and the woman in her fifties with a work-related injury and least favourable towards the young man.

To test whether these expected differences in deservingness influence people's support for providing welfare, we regressed Welfare Opinion on dummy variables for each experimental condition. Model 1 in Table 1 shows the results of this regression analysis, and for ease of interpretation, the effects are displayed in Figure 1. As the respondents have been randomly assigned to the specific description of the welfare recipient, all other differences between respondents are held constant. Hence, all differences in opinions across the conditions can be attributed to the differences in the descriptions of the specific welfare recipients.

*Table 1.* Welfare opinion by specific welfare recipient, egalitarianism and political sophistication (Study 1)

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|---|---|---|---|---|---|
| Intercept | 0.21*** (0.02) | 0.17*** (0.03) | 0.23*** (0.05) | 0.28*** (0.06) | 0.17** (0.06) |
| Recipient 1: Young man | Ref. | Ref. | Ref. | Ref. | Ref. |
| Recipient 2: Woman in her fifties | 0.35*** (0.03) | 0.35*** (0.03) | 0.34*** (0.03) | 0.34*** (0.06) | 0.40*** (0.06) |
| Recipient 3: Woman with a work-related injury | 0.50*** (0.03) | 0.50*** (0.03) | 0.50*** (0.03) | 0.41*** (0.06) | 0.59*** (0.06) |
| Recipient 4: Aged man | 0.58*** (0.03) | 0.58*** (0.03) | 0.58*** (0.03) | 0.49*** (0.06) | 0.68*** (0.06) |
| Egalitarianism | – | 0.10** (0.03) | –0.07 (0.08) | –0.06 (0.08) | 0.09 (0.10) |
| Political sophistication | – | – | –0.11 (0.07) | –0.20* (0.10) | –0.11 (0.07) |
| Egalitarianism × Political sophistication | – | – | 0.31* (0.12) | 0.30* (0.12) | 0.30* (0.12) |
| Political sophistication × Recipient 2 | – | – | – | 0.01 (0.10) | – |
| Political sophistication × Recipient 3 | – | – | – | 0.18 (0.11) | – |
| Political sophistication × Recipient 4 | – | – | – | 0.17 (0.10) | – |
| Egalitarianism × Recipient 2 | – | – | – | – | –0.14 (0.10) |
| Egalitarianism × Recipient 3 | – | – | – | – | –0.21* (0.10) |
| Egalitarianism × Recipient 4 | – | – | – | – | –0.22* (0.10) |
| Adj. $R^2$ | 0.28 | 0.28 | 0.28 | 0.28 | 0.28 |

Notes: N = 1,272. Entries are unstandardised OLS regression coefficients with standard errors in parentheses. All variables vary between 0 and 1. The dependent variable is Welfare Opinion with higher values indicating less support for restricting activation requirement (i.e., higher values indicate more pro-welfare attitude). * = $p < 0.05$; ** = $p < 0.01$; *** = $p < 0.001$.
[Correction added after online publication, 1 April 2010: Misplaced asterisks removed from coefficient for the variable 'Egalitarianism'.]
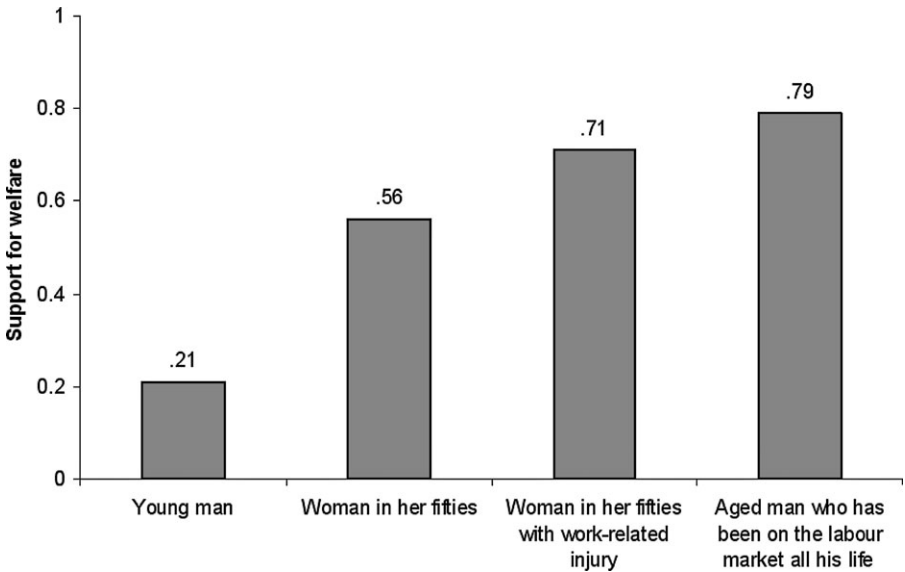
*Figure 1.* Welfare opinion by specific welfare recipient (Study 1).
Note: Values computed from Table 1, model 1. The dependent variable is Welfare Opinion with higher values indicating less support for restricting activation requirement (i.e., higher values indicate more pro-welfare attitude).

As revealed in Figure 1, there are quite large differences in citizens' support for welfare provision depending on the specific welfare recipient they are facing (the effect of the total set of conditions is $F = 162.01$, $p < 0.000$ and, furthermore, all differences between individual conditions are significant at the 0.05 level). For the 'Aged man' and (slightly less so) the 'Woman with a work-related injury' the average opinions are firmly supportive of providing welfare. More people are sceptical of providing welfare to the 'Woman in her fifties' (when no additional information about her is presented), but the average opinion still leans towards support for welfare provision. This difference between the two women suggests that the work-related injury in itself makes a person more deserving, which is in line with the suggested logic of the deservingness heuristic. Presumably, the woman is not to blame for the injury and thus has less control over her situation. Finally, we see an overwhelming rejection of the 'Young man's' claim for welfare support. In sum, these differences between the four recipients of social welfare are in line with the theory of the deservingness heuristic.

As is the case with similar programmes in many other countries, the social welfare benefits programme is one of the least popular welfare programmes among Danes (Goul Andersen 2008). Only for one specific recipient (the

young man) does a majority support tightening the activation requirements for receiving welfare. In contrast, in relation to the 'Aged man', almost two out of three respondents 'completely disagree' that the requirements should be made stricter and, hence, support for providing welfare is astonishingly high. Even highly subtle deservingness cues can, in other words, sway respondents to support an otherwise disliked welfare programme. These results clearly suggest that people spontaneously rely on the deservingness heuristic and thereby provide the first piece of support for the notion of the deservingness heuristic as an automatic heuristic.

*Is discrimination moderated by political sophistication?*

The standard political science account of heuristics stresses how they are used by the least sophisticated to compensate for difficulties in grounding opinions in, for example, political values. In contrast, given the proposed automaticity of the deservingness heuristic, we suggest that the heuristic is triggered not as a compensating strategy among the least aware, but by the mere presence of relevant cues. To test the validity of this argument, we seek to demonstrate, first, that the least sophisticated do in fact have difficulties applying their values when forming an opinion, but second, that this does not lead the non-sophisticates to rely more on the deservingness heuristic than the sophisticates.

The analyses are presented in models 2–4 in Table 1. In model 2, we add Egalitarianism to the regression model. As can be seen from the positive and significant coefficient, Egalitarianism does, as expected, influence the degree of support for providing welfare to the specific recipients: the more egalitarian, the more supportive of providing welfare. In model 3, we add Political Sophistication and the two-way Egalitarianism × Political Sophistication interaction to test whether the effect of Egalitarianism is stronger for the more sophisticated and, hence, whether the sophisticates more easily can apply their values in the specific situation. In line with much prior research (e.g., Basinger & Lavine 2005; Zaller 1992; but see Goren 2004), we find a positive and significant two-way interaction. As Political Sophistication increases, the effect of Egalitarianism on Welfare Opinion becomes significantly stronger. In fact, for the least sophisticated (Political Sophistication = 0) there is no effect at all of egalitarian values (as revealed by the non-significant coefficient for Egalitarianism, b = −0.07). Hence, the least sophisticated do indeed have difficulties grounding their opinions on the welfare recipients in their political values.

The question, then, is whether the least sophisticated seek to compensate for their lack of value-based opinions by relying on the deservingness heuristic. If this is the case, we should expect the least sophisticated to discriminate more

on the basis of deservingness-relevant cues than the most sophisticated. If, however, the deservingness heuristic is automatically evoked in the presence of such cues, we should not expect political sophistication to moderate the degree of discrimination. To test this, in model 4 we add interactions between the experimental conditions and Political Sophistication. With these two-way interactions, we test whether the least and the most sophisticated differ in the degree to which they discriminate among the recipients. As revealed in model 4, all individual interaction terms are insignificant (as is the effect of the total set of interactions; $F = 1.75$, $p = 0.16$), indicating that respondents' degree of political sophistication does not change their reliance on deservingness cues.[7]

These analyses show that while it is true that the least sophisticated have a hard time connecting their political values to specific policy questions, this does not make them more inclined to rely on the deservingness heuristic. In contrast to the conventional view on heuristics in political science, the deservingness heuristic is not evoked to offset the difficulties associated with a lack of political sophistication. Rather, consistent with the notion of the deservingness heuristic as an automated heuristic, this heuristic is seemingly used by all segments of the public whenever relevant cues are present.

### Do unambiguous deservingness cues crowd out values?

If the deservingness heuristic is automated, not only should its use be independent of political sophistication. The presence of unambiguous deservingness cues and, hence, a strong activation of the heuristic could, moreover, reduce people's need for consulting other and more elaborate lines of reasoning. In this way, the presence of such cues might, for example, crowd out political values from the opinion formation process. If this is the case, the use of the deservingness heuristic not only does not compensate for difficulties in connecting values and opinion, it actively reduces the effect of values on opinion.

As argued in the design section, the respondents are provided with relatively unambiguous cues in two of the experimental conditions, while the cues provided in the other two conditions are more ambiguous. In the 'Aged man' and 'Woman with a work-related injury' conditions, respondents are provided with clear cues that the recipients have worked before and are not to blame themselves for their need of welfare. In the 'Young man' and 'Woman in her fifties' conditions, however, the respondents need to make relevant inferences themselves based on the recipient's age. Hence, if the presence of unambiguous deservingness cues crowds out values, we should expect the effect of Egalitarianism on Welfare Opinion to be significantly smaller in the former two experimental conditions.
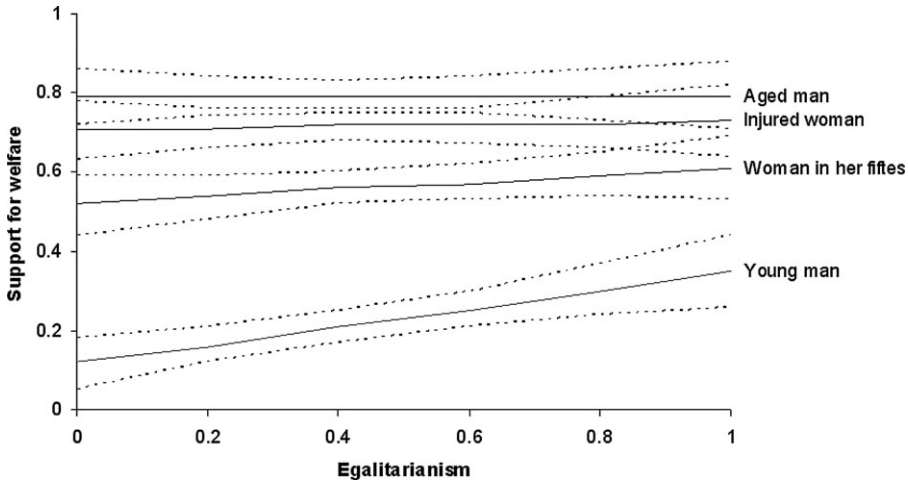
*Figure 2.* Welfare opinion by specific welfare recipient and egalitarianism (Study 1).
Note: Values computed from Table 1, model 5. The dependent variable is Welfare Opinion with higher values indicating less support for restricting activation requirements (i.e., higher values indicate more pro-welfare attitude). Confidence intervals have been calculated using Clarify.

To test whether this is the case, model 5 in Table 1 includes two-way interactions between Egalitarianism and the experimental conditions. These interaction terms test whether the influence of Egalitarianism on Welfare Opinion is different in the face of the different specific recipients. For ease of interpretation, the predicted values, together with 95 per cent confidence intervals, are plotted in Figure 2. Two important observations can be made. First, across all levels of egalitarianism the four recipients are ranked similarly. Thus, despite large differences in political values, among all citizens support for tighter requirements is most widespread in relation to the 'Young man' – he is perceived to be the least deserving, while the 'Aged man' and 'Woman with a work-related injury' are seen as the most deserving. These results strongly suggest that the deservingness heuristic picks up cues about responsibility for the employment situation and past contributions.

Second, we find support for our expectation that the availability of unambiguous deservingness cues crowds out political values from the opinion formation process. Hence, opinions in the 'Young man' condition are significantly ($p < 0.000$) influenced by Egalitarianism, and Egalitarianism also to some extent conditions responses in the 'Woman in her fifties' condition (although this slope is not significantly different from zero; $p = 0.14$). In contrast, opinions on the 'Woman with a work-related injury' and the 'Aged man' are constant across different levels of Egalitarianism. As revealed by the significant t-tests

of the related interaction terms, these differences in the effect of Egalitarianism are significant (the overall F-test for the full set of interaction terms is marginally significant; $F = 2.13$, $p = 0.095$). This indicates that the ambiguity of the cues makes a difference: As expected, in the face of relatively unambiguous deservingness cues, the impact of political values decreases and citizens' deservingness judgments become similar across the political spectrum. In this way, clear cues to the deservingness of welfare recipients do not compensate for a lack of value-based reasoning, but rather, actively crowds out such reasoning.

## Study 2

Study 1 strongly suggests that the deservingness heuristic does not operate in the way political scientists conventionally believe heuristics to work. Seemingly, the deservingness heuristic is not used to compensate for a lack of value-based reasoning. Instead, the heuristic apparently is triggered by the mere presence of relevant cues and, in fact, actively reduces the role of values in opinion formation when these cues are unambiguous. Still, much hinges on whether our interpretation of the differences between the specific recipients in Study 1 is correct. Therefore, we designed a second study to demonstrate more directly the validity of our interpretation of the dynamics involved in Study 1. Specifically, Study 2 is designed to demonstrate the validity of three core assumptions. First, that it is considerations of deservingness that lead citizens to discriminate between the four specific welfare recipients from Study 1. Second, that it is the ambiguity of the available cues that moderates the effect of political values. And third, that the deservingness heuristic is indeed an automated heuristic and, hence, that our most basic theoretical notion is valid.

### Design and measures

Study 2 was conducted as part of a web survey on an approximately nationally representative sample. The response rate (AAPOR RR1) was 47 per cent, and the part of the survey of interest here contains responses from about 500 respondents.[8] Study 2 repeated the basic experimental design from Study 1 and, hence, included the four welfare recipients described above[9] – again with the main dependent variable being Welfare Opinion, measured with the question relating to whether 'the activation requirements should be made stricter for him (her)' (measured on a seven-point scale). This measure is coded to

range from 0 to 1 with higher values indicating support for providing welfare (i.e., opposition to restricting activation requirements for receiving welfare benefits).

However, Study 2 extended the first study in several important ways, allowing us to shed further light on the processes underlying citizens' use of the deservingness heuristic in forming opinions on welfare policy. First, we added a control condition without deservingness cues in which respondents were simply asked to imagine 'a person who receives social welfare benefits'. The control group enables us to assess reactions to the specific recipients more precisely.

Second, we asked two questions designed to tap the perceived deservingness of each recipient directly. We asked whether the respondents agreed that 'he (she) could get a job, if he (she) wanted to' and whether they agreed that 'he (she) has contributed enough to deserve social welfare'. The first question taps the control-related side of deservingness, the second question the reciprocity-related side of deservingness. The answers to the questions (correlated at $r = -0.35$, $p < 0.000$) were combined to form a scale measuring the perception of the specific recipients' deservingness. This Deservingness Perception variable was coded between 0 and 1 with higher values indicating higher deservingness.

Third, Study 2 was designed to test whether the deservingness heuristic indeed is automatic in the sense that it is used quickly and effortlessly. Consistent with prior studies (Bassili 1995; Huckfeldt et al. 1999), we measure automaticity using response time. Specifically, for each subject we collected the elapsed time from the description of the recipient appeared on the screen until the respondent stated his or her agreement with the above questions and continued to the next screen. To be sure, this is a noisy measure, most prominently because information needs to travel back and forth over the Internet and, hence, will be affected by factors such as the speed of the respondents' Internet connection. To reduce noise in the data, we use ranked response times rather than the exact response time in milliseconds to form the variable Faster Response. This variable is coded such that the slowest respondent is assigned a value of 0 and the fastest respondent a value of 1. This variable along with Deservingness Perception allows us to investigate directly the role and automaticity of deservingness considerations in opinion formation.

Fourth, we included a measure to investigate directly whether the ambiguity of deservingness cues regulates the effect of political values. On the next screen, after the respondents had answered all questions about the specific recipient and response times had been collected, they were asked: 'Was it easy or hard to form a clear impression of the welfare recipient from the information provided?' We constructed a dichotomous variable, Perceived Clarity of

Cues, where respondents finding it 'Very hard' to form a clear impression are coded as 0, while all other respondents are coded as 1.[10] Finally, Egalitarianism was measured using the same set of items as in Study 1 (alpha = 0.68).

*Do deservingness perceptions mediate the effect of cues?*

A first analytical step is testing whether we can replicate the experimental effects from Study 1. In model 1 in Table 2 we regress support for providing welfare on the experimental conditions. As revealed in the model, we find the exact same ordering of the specific recipients in terms of their deservingness. Most support is expressed for providing welfare to the 'Aged man' (mean = 0.82) and the 'Woman with a work-related injury' (mean = 0.73), least support for the 'Young man' (mean = 0.48), and again, the 'Woman in her fifties' is placed somewhere in the middle (mean = 0.69). While the differences are smaller in this study than in Study 1,[11] the robustness of the relative levels of support is striking. In addition, the inclusion of a neutral control group gives rise to interesting findings. Consistent with the general unpopularity of the social welfare programme, we see that support for providing welfare to the neutral recipient is small (mean = 0.53). Furthermore, we see that support for providing welfare to the 'Young man' is not significantly different from support

*Table 2.* Welfare opinion mediated by perceptions of deservingness (Study 2)

| | Model 1: Welfare opinion | Model 2: Deservingness perception | Model 3: Welfare opinion |
|---|---|---|---|
| Intercept | 0.53*** (0.03) | 0.50*** (0.03) | 0.13*** (0.04) |
| Recipient 0 (control group) | Ref. | Ref. | Ref. |
| Recipient 1: Young man | −0.05 (0.04) | 0.01 (0.04) | −0.06 (0.04) |
| Recipient 2: Woman in her fifties | 0.16*** (0.04) | 0.09* (0.04) | 0.11** (0.04) |
| Recipient 3: Woman with a work-related injury | 0.20*** (0.04) | 0.18*** (0.03) | 0.09* (0.04) |
| Recipient 4: Aged man | 0.29*** (0.04) | 0.18*** (0.03) | 0.18*** (0.04) |
| Deservingness perception | – | – | 0.60*** (0.05) |
| Adj. $R^2$ | 0.15 | 0.10 | 0.35 |

Notes: N = 509. Entries are unstandardised OLS regression coefficients with standard errors in parentheses. All variables vary between 0 and 1. The dependent variable in models 1 and 3 is Welfare Opinion with higher values indicating less support for restricting activation requirement (i.e., higher values indicate more pro-welfare attitude). The dependent variable in models 2 is Deservingness Perception with higher values indicating higher deservingness. * = p < 0.05; ** = p < 0.01; *** = p < 0.001.

to the neutral recipient in the control group. This is consistent with the argument that the deservingness cues in the 'Young man' condition are relatively ambiguous.

If our argument is correct, considerations of deservingness are responsible for this robust discrimination between specific welfare recipients. This argument, in other words, implies that deservingness perceptions *mediate* the effect of the experimental manipulations and, hence, that the effects of the experimental manipulations on opinion arise because the recipients are perceived as different in terms of deservingness in the first place. To test this, we rely on the explicit measure of the recipients' perceived deservingness. If this measure mediates the experimental effect, we should observe that deservingness perceptions differ as expected across the experimental conditions – that is, the experimental manipulations influence the variable Deservingness Perception – and that the deservingness perceptions influence support for providing welfare (see MacKinnon et al. 2007).[12] Models 2 and 3 in Table 2 provide the tests relating to this mediating hypothesis.

In model 2, we regress Deservingness Perception on dummy variables for each experimental condition, with the control group being the reference category. As can be seen, deservingness perceptions differ across the specific welfare recipients and do so in a manner consistent with the results in model 1. Thus, when we directly measure perceptions of deservingness, we again see the exact same ordering of the recipients: the 'Aged man' and the 'Woman with a work-related injury' are perceived as significantly more deserving, the 'Young man' as clearly less deserving and the 'Woman in her fifties' in-between.

Is it, then, these perceptions that drive the different levels of support for providing welfare? We investigate this in model 3, regressing Welfare Opinion on the experimental conditions as well as Deservingness Perception. Two observations stand out. First, the perception of the specific recipient's deservingness strongly affects support for providing welfare. Given the coding of the variables, a change in Deservingness Perception from least (0) to most (1) deserving moves Welfare Opinion as much as 60 per cent of the full scale. Second, comparing models 1 and 3 reveals that the inclusion of Deservingness Perception causes the experimental effects to drop substantially. Hence, while the insignificant effect of the 'Young man' condition, unsurprisingly, stays insignificant, the effect of the 'Aged man' condition drops from 0.29 to 0.18, the 'Woman with a work-related injury' condition drops from 0.20 to 0.09, and the 'Woman in her fifties' condition drops from 0.16 to 0.11.[13]

Formal mediation tests reveal that the combined paths from the experimental conditions to Deservingness Perceptions and from deservingness perception to welfare support are significant. In all three cases, Sobel tests are

significant (specifically, for the 'Aged man': Sobel coef. = 0.13, p < 0.000; for the 'Woman with a work-related injury': Sobel coef. = 0.13, p < 0.000; for the 'Woman in her fifties': Sobel coef. = 0.05, p < 0.05). These results not only corroborate previous literature in showing that deservingness judgments are a key component of welfare opinions, but they also clearly support our interpretation of the results in Study 1. Hence, by directly measuring perceptions of deservingness, we have provided support for our argument that the deservingness heuristic is in fact a key factor accounting for the observed differences in support for welfare.[14]

*Does the perceived clarity of cues moderate the effect of values?*

The above analyses support the first part of our argument that discrimination between specific recipients is to a significant extent driven by the deservingness heuristic. In this section, we turn to the second part of our argument, that values are crowded out from opinion formation in the face of unambiguous deservingness cues. While Study 1 lends considerable support to this notion, we only measured the clarity of cues indirectly by focusing on the amount and nature of the information provided across the experimental conditions. In contrast, Study 2 directly measured the clarity of the cues by asking about the extent to which respondents felt it was hard to form a clear impression of the recipients. If it is indeed this factor that crowds out values, we should be able to find an interaction between Perceived Clarity of Cues and Egalitarianism such that the effect of Egalitarianism on welfare support decreases when Perceived Clarity of Cues is higher.

We test this expectation in model 1 of Table 3 where Welfare Opinion is regressed on Deservingness Perception, Egalitarianism, Perceived Clarity of Cues and the two-way Egalitarianism × Perceived Clarity of Cues interaction. Consistent with our argument, the model reveals a significant interaction. When Perceived Clarity of Cues is low, the effect of Egalitarianism is 0.37. When Perceived Clarity of Cues is high, however, the effect of Egalitarianism drops to 0.06 and turns insignificant (p = 0.26). Hence, consistent with the interpretation of the effects in Study 1, our analysis reveals that when citizens are able to form clear impressions of the deservingness of welfare recipients, they rely exclusively on their deservingness perception and disregard their general values.

*Is the deservingness heuristic automatic?*

Our expectations about the role of deservingness perceptions and political values in opinion formation were premised on the notion that the deserving-

*Table 3.* Moderated effects of egalitarianism and perceptions of deservingness on welfare opinion (Study 2)

|  | Model 1 | Model 2 |
|---|---|---|
| Intercept | 0.01 (0.08) | 0.16 (0.10) |
| Deservingness perception | 0.65*** (0.05) | 0.43*** (0.11) |
| Perceived clarity of cues | 0.13 (0.08) | 0.12 (0.08) |
| Egalitarianism | 0.37** (0.14) | 0.35** (0.14) |
| Egalitarianism × Perceived clarity of cues | −0.31* (0.14) | −0.29* (0.14) |
| Faster response | – | −0.29* (0.12) |
| Deservingness perception × Faster response | – | 0.44* (0.18) |
| Adj. $R^2$ | 0.29 | 0.30 |

Notes: N = 465. Entries are unstandardised OLS regression coefficients with standard errors in parentheses. All variables vary between 0 and 1. The dependent variable is Welfare Opinion with higher values indicating less support for restricting activation requirement (i.e., higher values indicate more pro-welfare attitude). * = $p < 0.05$; ** = $p < 0.01$; *** = $p < 0.001$. [Correction added after online publication, 1 April 2010: Misplaced asterisk removed from coefficient for the variable 'Perceived clarity of cues'.]

ness heuristic is an automatic process that spontaneously triggers in the face of deservingness-relevant cues and in turn weakens citizens' reliance on lines of reasoning that require more effort (e.g., reliance on political values). As we have argued above, the general relevance of deservingness considerations along with findings from neuroscience support this notion.

The key question, however, is whether it is possible to replace theoretical speculation with empirical findings. One obstacle in this regard is methodological. While most studies by political scientists on opinion formation rely on highly cognitive and explicit measures, investigating deep psychological processes such as automaticity requires the use of implicit measures that evade conscious post-hoc rationalisations. In the few studies in political science that have actually studied automaticity, response time is a frequently used measure (e.g., Huckfeldt et al. 1999). Following these studies, we obtained response times while respondents answered questions about the specific recipients.

A central feature of automatic processes is that they are utilised effortlessly – that is, fast. In line with this, we find a positive correlation between Faster Response and Perceived Clarity of Cues (r = 0.10, p = 0.027). Thus, when clear cues are available, response times are faster.

Furthermore, research suggests that the effect of automatic processes is greatest when effort is low so that they are not overridden by other more conscious processes (Bargh 1994: 28). Given this, if the deservingness heuristic is automatically applied to welfare judgments, we should expect the effect of

deservingness perceptions to be dependent on the speed of opinion formation. The faster opinions are formed, the greater the effect of deservingness perceptions should be. This implies the existence of a two-way interaction effect between response time and deservingness perceptions on welfare support. We test this expectation in model 2 of Table 3. Specifically, we extend model 1 by adding our measure of response time, Faster Response (i.e., measuring the swiftness of the response to the experiment), and the two-way Deservingness Perception × Faster Response interaction. As expected, the interaction term is significant and positive. The effect of Deservingness Perception on Welfare Opinion is 0.43 among the slowest responding subjects, but as much as $0.43 + 0.44 = 0.87$ among the fastest respondents. Making inferences from considerations of deservingness when forming welfare opinions is indeed effortless and, hence, the analyses lend substantial support to the notion of the deservingness heuristic as automatic.

This conclusion is supported by other observations. First, the effect is robust to control for a measure of Political Sophistication (in this study constructed from answers to four factual questions about politics; alpha = 0.65) and a significant two-way Political Sophistication × and Deservingness Perception interaction. In fact, the Deservingness Perception × Faster Response interaction is almost unaltered by the inclusion of these additional variables (after control: b = 0.41, p = 0.02). This finding is important as Burdein et al. (2006: 362) have criticised this use of response times because, as they argue, such results might be caused by 'a "quicker" deliberative response, where the politically knowledgeable person is able to assemble an opinion faster than a novice' and this might, at the same time, account for the greater consistency between perceptions and opinion among the fastest respondents. However, as is clearly indicated by our analyses, the Deservingness Perception × Faster Response interaction is not spurious in this way.[15] In fact, Political Sophistication and Faster Response are unrelated (r = 0.04, p = 0.34).

Second, our data provide additional evidence for the automaticity of the deservingness heuristic. If the deservingness heuristic is automatic, we should not only expect the use of deservingness perceptions, but also the formation of such perceptions, to be effortless. In line with this, there is a significant two-way interaction between the overall experimental variable and Faster Response (F = 2.46, p < 0.05). The faster respondents judge the welfare recipients, the more they discriminate between them. Hence, comparing the 'Young man' and the 'Aged man' conditions, the difference in Deservingness Perception is 0.01 for the slowest respondents and 0.34 for the fastest respondents in the 'Aged man's' favour. This difference is highly significant (p = 0.004). Comparing the 'Young man' with the 'Woman with a work-related injury', the differences are 0.08 and 0.24, respectively (and marginally significant; p = 0.09), and

comparing the 'Young man' and the 'Woman in her fifties' the differences are 0.00 and 0.14, respectively (p = 0.22). In tandem with the other observations, these findings provide strong support for our fundamental theoretical claim about the automaticity of the deservingness heuristic.

## Conclusions and discussion

Previous work on welfare attitudes has identified political values and perceptions of deservingness as important factors influencing citizens' support for welfare policy. Our study extends these insights by illuminating how the impact of values and perceptions of deservingness varies depending on which contextual information citizens have available when forming welfare opinions. In particular, we argue that whenever citizens face deservingness-relevant cues, the deservingness heuristic should trigger and prompt citizens to spontaneously think about welfare policy in terms of deservingness. Thus, in contrast to the conventional perspective on heuristics in public opinion research, it is not lack of substantive knowledge about the issue that causes citizens to rely on the deservingness heuristic, but the mere availability of cues that fit the heuristic. Therefore, individuals should be highly sensitive to contextual information indicating that welfare recipients are either lazy or unlucky, regardless of their level of political sophistication. In addition, and further departing from the conventional view of heuristics in political science, we argue that the automatic activation of the deservingness heuristic actively crowds out values from opinion formation, rather than sustaining or increasing value consistency in policy opinions.

Two novel experimental studies, embedded in two different nationwide opinion surveys, provided strong support for these arguments. Across both studies, we found that deservingness cues influenced welfare opinion. In Study 1, we demonstrated that in the presence of deservingness cues the more politically sophisticated individuals were just as inclined to rely on perceptions of deservingness as the least politically sophisticated. Thus, the deservingness heuristic does not appear to compensate for lack of knowledge. Rather, it is automatically activated by specific information. Moreover, we found that the availability of unambiguous, or clear, cues crowded out political values from the opinion formation process. Thus, the deservingness heuristic is not a shortcut to better connect the specific opinion with deeper values, but rather reduces the reliance on these values. These observations are clearly consistent with our account that as soon as deservingness cues are present, the deservingness heuristic will guide opinion on welfare policy.

Study 2 replicated the basic impact of deservingness cues on welfare opinion as well as providing three direct tests of the underlying psychological mechanisms. First, we demonstrated that the impact of deservingness cues on welfare opinion was mediated by respondents' perceptions of deservingness. Second, we directly measured the perceived clarity of the deservingness cues and showed that when individuals were able to form clear impressions from the cues provided, they relied solely on perceptions of deservingness and disregarded their values. Third, with measures of response time we found that faster responses co-occurred with larger impact of perceptions of deservingness, lending support to the deservingness heuristic as an automated process. Together, these findings provide compelling support for the deservingness heuristic as an automatic and fundamental process explaining citizens' opinions on welfare policies and show how different contextual information might lead to considerable differences in policy support.

These novel insights into what we believe are crucial processes underlying opinion formation on welfare have at least two important implications for understanding public opinion on welfare. First, previous studies of welfare attitudes have typically asked people about their opinion on a given welfare policy or welfare spending without referring to the specific recipients benefitting from policy (e.g., Blekesaune & Quadagno 2003; Feldman & Steenbergen 2001). While we do not intend to question the validity or importance of such findings, the distributions of opinion in these studies might be conditional. In light of the present study, public opinion might take quite different shapes depending on which images of welfare recipients dominate public perceptions at the time of opinion formation (see Jacoby 2000). In the absence of specific informational cues, citizens will likely rely on their general perceptions of the deservingness of welfare recipients as well as other considerations, including values. However, as soon as specific images suggesting that welfare recipients are either lazy or unlucky come to dominate the context of opinion formation, the deservingness heuristic will lead people to rely more on deservingness perceptions and, in turn, aggregate public opinion might shift.

This observation leads to a second important implication of our findings. Specifically, the logic of the deservingness heuristic can help us understand how elite strategies can influence support for welfare state policies. As evidenced by studies of framing, the information citizens rely on in opinion formation may often have been strategically presented by political elites in order to win support for their preferred positions (see Chong & Druckman 2007; Jerit 2008). The basic premise of framing is that most political issues are multifaceted and ambiguous and therefore open to different interpretations. By framing an issue, a speaker emphasises a subset of potentially relevant considerations – such as pointing out which specific welfare recipients one should think of in relation to

the issue – and this might cause individuals to focus on these considerations when constructing their opinions (Druckman & Nelson 2003: 730). Studies of welfare opinion show that citizens' policy support can indeed be influenced by how elites choose to frame the issue (Iyengar 1991; Jacoby 2000; Nelson & Oxley 1999; Shen & Edwards 2005; Slothuus 2007).

Based on the above findings, political elites might effectively exploit the existence of the deservingness heuristic to frame a welfare policy strategically by emphasising either welfare recipients that will generally be perceived as deserving *or* undeserving – depending on a desire to enhance or decrease public support for a given policy. In this way, elites might be able to dramatically alter public support for a given policy. Indeed, given that the deservingness heuristic crowds out the impact of values, framing a welfare policy in terms of the deservingness of welfare recipients might be a particularly effective persuasive device because considerations about deservingness, at least to some extent, should override the influence of values, and successful framing might therefore sway policy support far beyond particular ideological groups (see Simon & Jerit 2007). In sum, linking detailed insights into the psychological underpinnings of citizens' political opinion formation with elite rhetoric in the mass media can provide a further understanding of the dynamics of aggregate public opinion on welfare policy.

## Acknowledgements

## Notes

1. Ultimately, psychological research suggests that the question of whether a needy person is deserving or not relates to whether that person is intentionally attempting to free-ride on the hard work of others (Cosmides & Tooby 1992; Fong et al. 2006).

2. Deservingness judgments seem to be ubiquitous across human cultures (Weiner 1995; Cosmides & Tooby 1992) and detailed experimental studies also demonstrate that even non-human primates attend to the motivation of needy individuals when deciding whether to help or not (Hauser et al. 2003). This could suggest that the deservingness heuristic is not only an automatic, but also a hard-wired, decision-making strategy (Cosmides & Tooby 1992).

3. For an overview and discussion of survey experimental designs, see Gaines et al. (2007); Sniderman & Grob (1996). For an account of the evolution of the survey experiment in political science, see Sniderman (forthcoming).

4. The field work was carried out by the Danish National Centre for Social Research (SFI-Survey) from April through July 2006. A random sample of Danish citizens aged 18–70 was drawn from the Central Office of Civil Registration, which has records of all Danish residents. The telephone numbers of 89 per cent of these individuals could be located. The sample is representative of the target population (details available from the authors).

5. Analyses reveal that the random assignment was successful. Hence, we find no significant differences between the experimental groups with regard to gender, age, education, political interest, political sophistication or egalitarianism.

6. The questions read: 'Which parties are members of the current government?'; 'Which party does Lotte Bundsgaard belong to?'; 'After the municipal reform, which level of government assumes responsibility for managing the hospitals in Denmark?'; 'Some of the political parties are more favourable than others towards refugees and immigrants. Are the Social Liberals more or less favourable towards refugees and immigrants?'; 'There are also some parties that place greater emphasis on tax cuts than others. Are the Conservatives among the parties that place more or less emphasis on immediate tax cuts?'; and 'Which country is hosting the EU Presidency this spring?'

7. Although the effects are non-significant, it could be noted that the coefficients on the interaction terms for Recipients 3 and 4 are somewhat large. In this regard, it is important to note the sign of these coefficients. Hence, if political sophistication decreased the reliance on deservingness cues, we should expect negatively signed interaction terms. The actual coefficients are, however, positive and thus directly at odds with the expectations from the standard perspective. One likely explanation for the positive signs is that political sophisticates tend to pay more close attention to the presented stimuli.

8. The survey was managed by YouGov Zapera polling agency and fielded 6–10 July 2009. The respondents were recruited from 18–70 year-olds in a standing web panel and, to ensure national representativeness on sex, age and geographical location, the respondents were quota-sampled on these variables. In addition, the data is weighted by these variables (details available from the authors).

9. Again, analyses reveal that the random assignment was successful. Hence, we find no significant differences between the experimental groups with regard to gender, age, education, political interest, political sophistication or egalitarianism.

10. To obtain answers, we used a rating scale ranging from 0 ('Very easy') to 10 ('Very hard'). Unexpectedly, however, this fine-tuned scale facilitated anything but a smoothly distributed response pattern. Some 18 per cent of all respondents answered 10, and 23 per cent answered 5 ('Neither easy nor hard'). To reduce this underlying measurement noise, we use the dichotomous coding. Importantly, this coding allows us to directly connect our measure of cue clarity with the experimental conditions in a manner consistent with the interpretation and results in Study 1. Hence, in the 'Young man'

condition the cues are perceived as significantly less clear than in all other conditions ($p < 0.02$ in all cases). This is consistent with the observation in Study 1 that the only significant effect of Egalitarianism is exactly in the 'Young man' condition. Also consistent with our argument, we find that in Study 2 the control condition – where cues are absent – is perceived as significantly less clear than the 'Woman in her fifties' and 'Woman with a work-related injury' conditions ($p < 0.03$ in both cases) and marginally so compared to the 'Aged man' condition ($p = 0.096$).

11. Note that the coefficients in Table 2 are not directly comparable to the coefficients in Table 1 due to a changed reference category.

12. A more thorough test of mediation would require experimental manipulation of the mediator. A problem with the present approach is that we cannot be certain about the causal ordering of deservingness perceptions and welfare support (Bullock et al. forthcoming; MacKinnon et al. 2007). Thus, MacKinnon et al. (2007: 608) conclude that this kind of analysis should be treated 'as descriptive information that may not reflect the true underlying causal mediation relation'. At the very least, however, our analyses will demonstrate, first, that deservingness perceptions are affected by the availability of deservingness cues, and second, that deservingness perceptions and welfare opinions are closely related.

13. An interesting question, of course, is what accounts for the rest of the experimental effect. In this regard, it is important to recall, first, that recipients are ordered in the same way on the explicit deservingness measure and on the measure of welfare support, but second, that our deservingness measure does not fully mediate the differences between recipients. If the argument about the automaticity of the deservingness heuristic is correct, it would imply that parts of the deservingness judgment happen preconsciously. Hence, in light of the two observations, one reason for the explicit measure's failure to fully mediate the effect could relate to the fact that explicit measures almost by definition cannot tap the entire range of preconscious activity.

14. To rule out alternative explanations for the observed discrimination between the recipients, we also asked whether the respondents agreed that '[the recipient] is incapable of participating in an activation programme'. Hence, it could have been that the aged man and the injured woman are not spared due to considerations about their deservingness, but simply because they – given their age and injuries – are not perceived as able to complete the programme. Controlling for this factor does cause a slight drop in the effect of deservingness perceptions from 0.60 ($p < 0.000$) to 0.51 ($p < 0.000$), but no drops in the effects of the experimental conditions. Apparently, it is specifically deservingness perceptions rather than related perceptions that drive the experimental effects.

15. In this regard, it should also be noted that mere response set cannot account for the interaction. The items involved in the analysis had different directions, and hence the interaction cannot arise from respondents simply agreeing with all statements without even reading them (which, to be sure, would be a fast response strategy).

# References

Alvarez, R.M. & Brehm, J. (2002). *Hard choices, easy answers: Values, information and American public opinion*. Princeton, NJ: Princeton University Press.

Andress, H.-J. & Heien, T. (2001). Four worlds of welfare state attitudes? A comparison of Germany, Norway and the United States. *European Sociological Review* 17(4): 337–356.

Bargh, J.A. (1994). The four horsemen of automaticity: Awareness, efficiency, intention and control in social cognition. In R.S. Wyer & T.K. Srull (eds), *Handbook of social cognition* (2nd edn). Hillsdale, NJ: Lawrence Erlbaum.

Bartels, L. (1996). Uninformed votes: Information effects in presidential elections. *American Journal of Political Science* 40(1): 194–230.

Basinger, S.J. & Lavine, H. (2005). Ambivalence, information and electoral choice. *American Political Science Review* 99(2): 169–184.

Bassili, J. (1995). Response latency and the accessibility of voting intentions: What contributes to accessibility and how it affects vote choice. *Personality and Social Psychology Bulletin* 21(7): 686–695.

Blekesaune, M. & Quadagno, J. (2003). Public attitudes toward welfare state policies: A comparative analysis of 24 nations. *European Sociological Review* 19(5): 415–427.

Bullock, J.G., Green, D.P. & Ha, S.E. (forthcoming). Yes, but what's the mechanism? (Don't expect an easy answer). *Journal of Personality and Social Psychology*.

Burdein, I., Lodge, M. & Taber, C. (2006). Experiments on the automaticity of political beliefs and attitudes. *Political Psychology* 27(3): 359–371.

Chong, D. & Druckman, J.N. (2007). Framing theory. *Annual Review of Political Science* 10: 103–126.

Cosmides, L. & Tooby, J. (1992). Cognitive adaptations for social exchange. In J.H. Barkow, L. Cosmides & J. Tooby (eds), *The adapted mind*. Oxford: Oxford University Press.

Druckman, J.N. & Nelson, K.R. (2003). Framing and deliberation: How citizens' conversations limit elite influence. *American Journal of Political Science* 47(4): 729–745.

Druckman, J.N., Kuklinski, J.H. & Sigelman, L. (2009). The unmet potential of interdisciplinary research: Political psychological approaches to voting and public opinion. *Political Behavior* 31(4): 485–510.

Feather, N.T. (2006). Deservingness and emotions: Applying the structural model of deservingness to the analysis of affective reactions to outcomes. *European Review of Social Psychology* 17: 38–73.

Feldman, S. (2003). Values, ideology and the structure of political attitudes. In D.O. Sears, L. Huddy & R. Jervis (eds), *Oxford handbook of political psychology*. New York: Oxford University Press.

Feldman, S. & Steenbergen, M. (2001). The humanitarian foundation of public support for social welfare. *American Journal of Political Science* 45(3): 658–677.

Feldman, S. & Zaller, J. (1992). The political culture of ambivalence: Ideological responses to the welfare state. *American Journal of Political Science* 36(1): 268–307.

Fong, C., Bowles, S. & Gintis, H. (2006). Strong reciprocity and the welfare state. In J. Mercier-Ythier, S. Kolm & L. André (eds), *Handbook on the economics of giving, reciprocity and altruism*. Amsterdam: Elsevier.

Gaines, B.J., Kuklinski, J.H. & Quirk, P.J. (2007). The logic of the survey experiment reexamined. *Political Analysis* 15(1): 1–20.

Gilens, M. (1999). *Why Americans hate welfare: Race, media and the politics of antipoverty policy*. Chicago, IL: University of Chicago Press.

Goren, P. (2004). Political sophistication and policy reasoning: A reconsideration. *American Journal of Political Science* 48(3): 462–478.

Goul Andersen, J. (2008). Public support for the Danish welfare state: Interests and values, institutions and performance. In E. Albæk et al. (eds), *Crisis, miracles and beyond: Negotiated adaption of the Danish welfare state*. Aarhus: Aarhus University Press.

Hauser, M. et al. (2003). Give unto others: Genetically unrelated Cotton-top Tamarin Monkeys preferentially give food to those who altruistically give food back. *Proceedings of the Royal Society, Biological Sciences* 270: 2363–2370.

Hobolt, S.B. (2007). Taking cues on Europe? Voter competence and party endorsements in referendums on European integration. *European Journal of Political Research* 46(2): 151–182.

Huckfeldt, R. et al. (1999). Accessibility and the political utility of partisan and ideological orientations. *American Journal of Political Science* 43(3): 888–991.

Iyengar, S. (1991). *Is anyone responsible? How television frames political issues*. Chicago, IL: University of Chicago Press.

Jacoby, W.G. (2000). Issue framing and public opinion on government spending. *American Journal of Political Science* 44(4): 750–767.

Jerit, J. (2008). Issue framing and engagement: Rhetorical strategy in pubic policy debates. *Political Behavior* 30(1): 1–24.

Kam, C.D. & Franzese, R.J. (2007). *Modeling and interpreting interactive hypotheses in regression analysis*. Ann Arbor, MI: University of Michigan Press

Kuklinski, J.H. & Quirk, P.J. (2000). Reconsidering the rational public: Cognition, heuristics and mass opinion. In A. Lupia, M. McCubbins & S. Popkin (eds), *Elements of reason*. Cambridge: Cambridge University Press.

Kumlin, S. (2007). The welfare state: Values, policy preferences and performance evaluations. In R.J. Dalton & H.D. Klingemann (eds), *Oxford handbook of political behavior*. Oxford: Oxford University Press.

Kunda, Z. & Sherman-Williams, B. (1993). Stereotypes and construal of individuating information. *Personality and Social Psychology Bulletin* 19(1): 90–99.

Kunda, Z. & Thagard, P. (1996). Forming impressions from stereotypes, traits and behaviors: A parallel constraint satisfaction theory. *Psychological Review* 103(2): 284–308.

Larsen, C.A. (2006). *The institutional logic of welfare attitudes*. Aldershot: Ashgate.

Lau, R.R. & Redlawsk, D.P. (2006). *How voters decide: Information processing during election campaigns*. New York: Cambridge University Press.

Loftager, J. (2004). *Politisk offentlighed og demokrati i Danmark*. Aarhus: Aarhus Universitetsforlag.

Lupia, A. (1994). Shortcuts versus encyclopedias: Information and voting behavior in California insurance reform elections. *American Political Science Review* 88(1): 63–76.

MacKinnon, D.P., Fairchild, A.J., Fritz, M.S. (2007). Mediation analysis. *Annual Review of Psychology* 58: 593–614.

Nelson, T.E. & Oxley, Z.M. (1999). Issue framing effects on belief importance and opinion. *Journal of Politics* 61(4): 1040–1067.

Petersen, M.B. (2009). Public opinion and evolved heuristics: The role of category-based inference. *Journal of Cognition and Culture* 9(3): 367–389.

Petersen, M.B., Roepstorff, A. & Serritzlew, S. (2009). Social capital in the brain? In G.T. Svendsen & G.L.H. Svendsen (eds), *Handbook of research on social capital*. Cheltenham: Edward Elgar.

Popkin, S.L. (1991). *The reasoning voter: Communication and persuasion in presidential campaigns*. Chicago, IL: University of Chicago Press.

Schwartz, S.H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology* 25: 1–65.

Shen, F. & Edwards, H.H. (2005). Economic individualism, humanitarianism and welfare reform: A value-based account of framing effects. *Journal of Communication* 55(4): 795–809.

Simon, A.F. & Jerit, J. (2007). Toward a theory relating political discourse, media and public opinion. *Journal of Communication* 57(2): 254–271.

Skitka, L.J. & Tetlock, P.E. (1992). Allocating scarce resources: A contingency model of distributive justice. *Journal of Experimental Social Psychology* 28(6): 491–522.

Skitka, L.J. et al. (2002). Dispositions, ideological scripts or motivated correction? Understanding ideological differences in attributions for social problems. *Journal of Personality and Social Psychology* 83(2): 470–487.

Slothuus, R. (2007). Framing deservingness to win support for welfare state retrenchment. *Scandinavian Political Studies* 30(3): 323–343.

Sniderman, P.M. (forthcoming). The logic of survey experiments. To appear in J.N. Druckman et al. (eds), *Handbook of experimental political science*. New York: Cambridge University Press.

Sniderman, P.M. & Grob, D.B. (1996). Innovations in experimental design in attitude surveys. *Annual Review of Sociology* 22: 377–399.

Sniderman, P.M., Brody, R.A. & Tetlock, P.E. (1991). *Reasoning and choice: Explorations in political psychology*. New York: Cambridge University Press.

Van Oorschot, W. (2000). Who should get what, and why? On deservingness criteria and the conditionality of solidarity among the public. *Policy & Politics* 28(1): 33–48.

Weiner, B. (1995). *Judgments of responsibility*. New York/London: Guilford Press.

Zak, P.J. (2007). The neuroeconomics of trust. In R. Frantz (ed.), *Renaissance in behavioral economics*. Florence, KY: Routledge.

Zaller, J.R. (1992). *The nature and origins of mass opinion*. New York: Cambridge University Press.

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