Identity, Non-Take-Up and Welfare Conditionality*

Claudia Hupkau† François Maniquet‡

November 11, 2017

Abstract

We study a model in which poor individuals of different types request a service and may suffer from the discrepancy between the service provider's beliefs and their true type. The utility loss resulting from such a discrepancy is referred to as an identity cost. Types are private information but service providers ideally prefer to favour individuals considered high type. They may choose to condition social service on an observable characteristic that is correlated with types but that can be manipulated by low type individuals at a cost. We show that whether conditionality enhances social welfare depends on this cost. If the cost is too low, high type individuals refrain from requesting the service because of the resulting identity cost, bringing about a so-called non-take-up equilibrium. In this case, unconditionality of the service provision is a Pareto improvement.

Keywords: Identity cost, reflected appraisals, non-take-up, welfare conditionality.

JEL classification: D03, H21, H23, I38.

*We thank B. Douglas Bernheim, Andrés Carvajal, Andrew Clark, Julio Davila, Jacques Drèze, Jon Eguia, Peter Hammond, Jean Hindriks, Georg Kirchsteiger, Wojciech Kopczuk, Sandra McNally, Massimo Morelli, Margherita Negri, Vladislav Nora, William Parienté, Paolo Piacquadio, Bernard Salanié, Erik Schokkaert and Rajiv Sethi for very useful discussions, and participants in seminars at University of Warwick, and the ECORE Summer School for their comments. The research leading to these results has received funding from the European Research Council under the European Union's Seventh Framework Programme (FP7/2007-2013) / ERC grant agreement no. 269831.

†Université catholique de Louvain, Voie du Roman Pays 34, 1348 Louvain-la-Neuve, Belgium. Present address: Centre for Economic Performance, London School of Economics, London, UK. E-mail: c.hupkau@lse.ac.uk. &

‡CORE, Université catholique de Louvain, and department of economics, University of Warwick. E-mail: francois.maniquet@uclouvain.be. This author is also a member of ECORE, an association of CORE and ECARES. Manuscript correspondence to: 34 Voie du Roman Pays, B-1348 Louvain-la-Neuve, Belgium; tel: +32 10 474328; fax: +32 10 474301.

1 Introduction

Many recent economic works have drawn attention to the fact that individuals' utilities do not only depend on what they do, but also on what they believe they are expected to do, or what others think they have done and why they have done it. We find it convenient to summarise those works under the name of models of identity.

There are two families of such models. In one family, an individual's identity is a prescription of actions associated with his or her type. These models of identity assume that individuals suffer a psychological cost when there is a discrepancy between the individual's action and what is prescribed by his or her identity. Bernheim (1994), for instance, shows that people tend to conform to norms of behaviour if doing so conveys status or esteem. Akerlof and Kranton (2000) similarly show that individuals who identify with a certain social group may conform to its ideals of behaviour because they enjoy the feeling of belonging to this group.

In the other family, an individual's identity is a personal characteristic to which the individual attaches value. Individuals suffer a psychological cost when there is a discrepancy between the true value of the characteristics and how they are perceived by the social environment. In Besley and Coate (1992a)'s stigma model, for instance, truly needy individuals suffer a cost for being considered non-needy.

Sociologists and social psychologists have extensively studied and documented how one's identity shapes one's actions (see Stets and Serpe (2016) for a recent discussion of this literature). More specifically, the fact that individuals care about the alignment between how they regard themselves and how others regard them is captured by the notion of reflected appraisals (Burke, 1991).[1] Reflected appraisals are an individual's belief about others' perceptions of his or her pre-dispositions, motivations or character traits, or, in the language of economics, type. Reflected appraisals influence behaviour because individuals suffer psychological costs, such as negative emotions, distress and anxiety, when perceived beliefs about their type do not correspond to their true type (Kalkhoff et al., 2016). Empirical support for this theory has been shown, for instance, by Burke and Harrod (2005).

In this paper, we introduce a notion of identity consistent with reflected appraisals into a model of social welfare. In particular, we show how identity costs, in the context of social service provision, may make individuals refrain from otherwise beneficial interactions. This allows us to capture the friction occurring in the interactions between recipients and providers of social and welfare services, viewed by Narayan et al. (2000) as an often ignored feature of welfare programs. We interpret people claiming to be

[1] Another stream in identity theory from social psychology is the so-called self-enhancement theory (Jones, 1973; Kaplan, 1975; Rogers, 1961). This theory argues that individuals enjoy being evaluated more positively than they see themselves. We present an extension of our model incorporating 'identity benefits' in section 5.

treated "worse than dogs" (Narayan et al., 2000, p. 97), "feeling powerless, unheard, and silenced" by social service providers (Narayan et al., 2000, p. 83) and finding "the attitudes of the professional staff in the services off-putting and patronising" (ATD Fourth World, 2006, p. 1) as examples of such frictions, and, therefore, justifications of this paper.

We assume that these frictions may arise because social service providers prefer to help a strict subgroup of poor people, depending on the value of an unobserved characteristic, for instance the effort made to look for a job, the willingness to work, or whether or not the person abuses drugs or alcohol. We show that the optimal welfare policy depends on the quality of the technology available to the service provider to distinguish between high type, that is, the type he or she prefers, and low type, poor individuals. When this technology is imperfect, welfare benefit conditionality may lead to a Pareto dominated situation. This happens even though high type individuals like to signal their type, and even though if the service provider rationally updates his beliefs over types. This is because conditionality induces low type individuals to imitate high type individuals, thereby causing the latter to incur an identity cost for being mixed up with the former. This identity cost makes high type individuals refrain from requesting services, and, anticipating this, the service provider is not willing to offer the service altogether, leading to what we call a non-take-up equilibrium.[2]

The mechanism by which the identity cost associated with negative reflected appraisals leads needy individuals to choose not to take up social services is simple: by refusing to interact with the service provider, the individual avoids incurring a large identity cost. When the technology to distinguish between types is perfect, low types cannot imitate high types, and cannot therefore impose any identity cost on the high type.

This result depends on the assumptions made on the technology, available to the service provider, to distinguish between high and low types. Conditions placed on job seekers, for instance, attending a certain number of interviews or sending a certain number of applications, are relatively easy to comply with even by those unemployed not truly interested in finding a job. A drug test, however, is an almost perfect tool to detect drug abuse and therefore to distinguish between high and low types. If such a technology is available, the service provider may prefer to use it over making services

[2]Besley (1990) also provides an argument against conditionality, in the case of vertical (means-tested) conditionality. His argument is based on the cost, for the claimants and the government, of implementing a means-tested benefit program. Note that in the case of unemployment insurance, in which conditionality may be implemented through job search monitoring, duration cut or sanctions, non-take-up can take the shape of early acceptance of unfit jobs. That job seekers under financial or monitoring pressure tend to accept lower quality jobs has been documented, e.g., by Petrogonlo (2009) for the U.K., Caliendo et al. (2013) for Germany, van den Berg and Vikstrom (2014) for Sweden and Gerards and Welters (2016) for Australia.

available unconditionally, as it allows them to deliver the service only to the high type, needy individual. This equally allows the high type individuals to signal their type.

There is a large body of work on the conditionality of welfare benefits. To compare this paper with the literature, the following distinction should be made. Conditionality may be vertical or horizontal. Vertical conditionality refers to the difference between the needs and the means of people. Welfare benefits should go to those who really need them (Besley, 1990). The two main problems associated with vertical conditionality are the incentive and the stigma problems. The incentive problem comes from the fact that needs are not observable. Many papers show that the optimal policies to circumvent the incentives of people who do not need help or who could produce their means themselves to mimic the needy ones may involve in-kind versus cash transfers (Currie and Gahvari, 2008), workfare versus welfare (Besley and Coate, 1992b), and tagging (Akerlof, 1978). The stigma problem comes from the fact that it may be costly for needy people to claim a benefit, as by doing so, they reveal their lack of resources (Moffitt, 1983; Besley and Coate, 1992a), which in turn causes them to feel shame. The incentive and the stigma problems both point towards policies that aim to reduce the number of non-needy claimants receiving benefits.

Horizontal conditionality, the key focus of this paper, is different. Assume needy individuals have been identified, a budget is ready to be spent to help them, and they will not suffer from any stigmatisation due to their lack of resources. Yet the social planner (or the service provider) may wish to make the provision of the service conditional on some type that is not directly related to resources. This is what happens when the social planner prefers to transfer money to people who are not drug addicts, to parents that care about the school performance of their children, or to unemployed people who have really looked for a job. Of course, all of these different types are not observable. In this paper, we assume that such a preference is legitimate, and we define the utility of the service provider in a way that allows us to capture it.

The paper is organised as follows: we present the model (Section 2), we study the conditional welfare policy (Section 3), we compare it with the unconditional policy and prove the main result (section 4). In the Section 5, we discuss three possible extensions and give some concluding comments in Section 6.

2 The Model

We present a model that demonstrates that conditioning the receipt of social services, based on type, may lead to a Pareto inferior outcome compared to a policy that is unconditional, due to the fact that technology to detect types is imperfect. This is a model of the interaction between a service provider and poor individuals.

A poor person is interested in his or her material well-being, m, and what we call

their identity, I, which will allow us to capture the notion of identity cost. We assume

$$m = r + s$$

where r is the exogenous resource of the poor person, and s is the contribution of the social service to the material well-being of this person, if the person requests it. He or she chooses to take up the service or not, as a function of his or her utility

$$U(m, I) = u(m) - v(I),$$

where u (resp. v) is an increasing and concave (resp., convex) real-valued function and $v(0) = 0$.

We are interested in the distinction between vertical (that is, means-tested) and horizontal conditionality. An individual is eligible for means-tested benefits if their resources are below some threshold. In our terminology, a means-tested benefit would be one that depends on r (see, for instance, Besley (1990) for a comparison of means-tested versus universal programmes with respect to their ability to alleviate poverty and to be cost efficient). We assume that all problems associated with means-testing have been solved, so that all the poor individuals we are interested in are similar in terms of their likely stigma or their lack of ability to gather necessary resources. Consequently, it is assumed that all individuals have the same r and, for the sake of simplicity, we fix $r = 0$.

On the other hand, we consider that the benefit s is conditional on some value of a type variable that is argument of the identity cost function. To simplify, we assume that there are two types of individuals, the high, h, and the low type, l, depending on the exogenous and unobservable value of their effort, e_h or e_l, with $e_h > e_l$. Even if there are several possible interpretations of these variables, we prefer to think of the types as being derived from a distinction that the service provider, itself, has in mind. We assume that these distinctions are legitimate, for example because they are endorsed by the majority of taxpayers. We assume in this section that e_h and e_l are exogenous. We show in Section 5 how the results generalise when we endogenise e_h and e_l.

We may think of s as a cash transfer that is only intended for individuals who are not drug addicts, a service that is dedicated to parents who care about the schooling of their children, or to unemployed individuals who are willing to accept jobs. Such a policy may be combined with a means test, our focus is however on the effect of the condition on e.

If a poor person chooses to request the service, then they may suffer an identity cost $v(I)$, due to the discrepancy between the poor person's actual type, $e \in \{e_h, e_l\}$, and the service provider's appraisal of that type, $\tilde{e}_s$. We assume that

$$I = \max\{0, e - \tilde{e}_s\}.$$

Given the max operator, the low type individuals will never suffer an identity cost, as they can only be perceived of a higher type than they truly are. We relax this assumption in 5 below.

The high type individuals, to whom the service is dedicated, choose between not requesting the service, in which case their material well-being is equal to 0, or requesting the service, in which case their total utility is equal to $u(s) - v(I)$.

The low type individuals choose between not requesting the service, in which case their material well-being is equal to 0, or requesting the service. If they request the service, they risk to be identified as a low type by the service provider. That is, their appearance plays the role of a signal of their type. Let a denote that signal. If they look 'bad' ($a = b$), then the service provider identifies them as a low type individual and allocates them benefit s_b. If they invest in appearance, at a cost of θ, then they look 'good' ($a = g$), they are indistinguishable from high type individuals, and they are assigned benefit s_g. We assume that cost θ reduces utility by $v(\theta)$. Cost θ is otherwise wasteful as it does not augment the individuals' (material) well-being.[3] This investment may manifest, for example, as an individual not drinking alcohol before a meeting with the service provider, to appear sober, or attending parent/teacher meetings at their child's school, or attending meetings with a job placement officer.

The service provider knows the relative sizes of the populations of high and low types; they form beliefs about the type of individuals who request the service. We assume that the service provider rationally updates the information he has after observing the appearance of the individuals. If an individual has a 'bad' appearance, then, according to the above assumption, the service provider is certain about that individual's type. If an individual looks 'good', the service provider rationally deduces the probability that this individual is of high or low type, that is,

$$\tilde{e}_s = E_s(e),$$

where E_s stands for the expectation operator given what the provider observes.

The result depends crucially on the ability of the service provider to impose conditions that are sufficiently hard to fulfill by low types, that is, on the relative size of θ compared to the possible benefit. In the example of drugs testing, for instance, it is virtually impossible for a low type to imitate the high type, because a drugs test will almost certainly detect drug abuse and is hard to falsify. In most circumstances, however, a perfect technology to distinguish low types from high types does not exist, or would be excessively costly to implement for the service provider.

A budget B needs to be allocated among poor individuals. Let the population of poor people consist of a mass 1 of high effort, and a mass 1 of low type individuals.

[3]We assume in this section that the signal is wasteful for both the poor individual and the social service provider. In section 5 we discuss the case when signalling is not completely wasteful, but is desirable from individual's and the social service provider's perspective.

We make the following assumption:

Assumption 1: Potential costs from negative reflected appraisals are large for the high type compared to the budget of the government for the welfare benefit B, that is, $v\left(\frac{e_h-e_l}{2}\right) > u\left(\frac{B}{2}\right)$.

Assumption 1 reads as follows: the amount $\frac{B}{2}$ corresponds to the average benefit, should all poor people receive it, whereas $\frac{e_h-e_l}{2}$ is the identity loss of the high type when all people are pooled. Assuming the utility decrease resulting from the latter to be larger than the utility gain associated with the former, is equivalent to assuming that if all low type agents succeed in mimicking high types so that the total budget is shared equally among all poor people, then the high type will prefer not to show up. Note that the assumptions of an equal mass of high and low types is purely for convenience. If, instead, we assumed that the population is composed of masses m_h and m_l of high and low type individuals, then Assumption 1 would read $v\left(\frac{m_l(e_h-e_l)}{m_h+m_l}\right) > u\left(\frac{B}{m_h+m_l}\right)$ and nothing would substantially change. The notation, on the other hand, would become heavier; the assumption of equal masses of one is therefore used.

It is important to add, on a more technical remark, that this simple model is an example of a dynamical psychological game in the sense of Battigalli and Dufwenberg (2009). Here, the utility of some individuals depends on the updated beliefs of others, a characteristic that is not allowed in psychological games, in the sense of Geanakoplos et al. (1989). It is very natural to use the framework of dynamic psychological games to study the emotions and feelings that emerge from the interactions of individuals, which are a key feature when analysing the implementation of anti-poverty policies. In game theoretical terms, we are interested in the perfect Bayesian equilibrium of the game.

3 The Conditional Policy

We next analyse the conditional welfare policy. The utility of the service provider, which we assume to be representative of the taxpayers' utility, is increasing in the amount of benefit attributed to the high type poor, s_h, and decreasing in the expected amount attributed to the low type poor, s_l. Let $\beta \in (0,1)$ denote the marginal disutility from giving one unit of the benefit to a low type individual. The assumption that $\beta < 1$ assures that the situation in which all poor individuals demand the welfare benefit is preferred to a situation where nobody does.

It may seem unfair to make the utility of the service provider decrease in the amount allocated to low type individuals; what we have in mind is that this policy is one element of a policy package that contains another, means-tested, policy to which

all poor individuals are entitled. As a result, we can think of the social service provider as maximising a typical inequality-averse social welfare function in which, for the same amount of monetary resources, high type individuals are considered worse-off than low type individuals, for instance because of the effort disutility. As a result, when we focus on the conditional policy we studied in this paper, the marginal social weight of low type individuals is negative, as it captures the difference in social weights between high and low types.

Let p_h (resp., p_l) denote the fraction of high effort (resp., low effort) individuals requesting the service. The service provider's utility is given by

$$p_h s_h - \beta p_l s_l. \tag{1}$$

The service provider does not observe effort. He or she only observes appearance. Consequently, the policy instruments are s_g and s_b, the amounts allocated to 'good-looking' and 'bad-looking' individuals, respectively. All high type individuals look 'good', and so do the fraction of low type individuals, requesting the service, who have invested in their appearance. Let σ denote that fraction. The service provider's budget constraint is written as

$$p_h s_h + p_l s_l = (p_h + p_l \sigma) s_g + p_l (1 - \sigma) s_b \leq B.$$

The timing of events is as follows: During stage one, poor individuals simultaneously decide whether or not to demand the service, and the low types decide whether or not to invest in their appearance. We assume that they all observe the choice of the others. In Stage two, the service provider observes the fraction of the poor who demand the service, $p_h + p_l$, the fraction of individuals who are 'good-looking', $p_h + p_l \sigma$, and the fraction of 'bad-looking' service claimants, $p_l\,(1 - \sigma)$, and determines the benefit levels s_g and s_b. Let us note that, from the point of view of poor individuals, the information is complete. As a consequence, by backward induction, they can perfectly predict the benefit levels. Observe that the assumption that the service provider announces the benefit levels in Stage one and not in Stage 2, not knowing the number of claimants, would be incompatible with the assumption of a fixed budget.

Some properties of the equilibria are easily identified. First, upon observing b, the service provider will offer a benefit of $s_b = 0$, since they are sure to be facing a low type. Conditional on observing g, the service provider will offer a benefit $s_g = \frac{B}{p_h + p_l \sigma}$ to welfare claimants as long as their expected utility is non-negative, that is, as long as $p_h - \beta p_l \sigma \geq 0$, or

$$\frac{p_h}{p_l \sigma} \geq \beta.$$

Given that, high type individuals will demand the benefit if and only if its value exceeds identity cost, that is, if and only if, $u(s_g) > v(\tilde{e}_s - e_h)$. As for the low type, they

demand the service if and only if $u(s_g) > v(\theta)$. We now discuss the equilibria under different assumptions on the size of θ relative to the size of the benefit B.

Assumption 2.a: $v(\theta) < u(\frac{B}{2})$.

Under the assumption that the cost of imitating the high type, θ, is relatively small compared to the budget of the government for the social service, full take-up, that is, $p_h = p_l\sigma = 1$, $s_g = \frac{B}{2}$ and $s_b = 0$, cannot be an equilibrium. Given individuals' effort, the service provider believes that the average effort of benefit claimants is worth, taking account of the fact that the masses of high and low type individuals are identical and equal to unity,[4]

$$\tilde{e}_s = \frac{p_h}{p_h + p_l\sigma} e_h + \frac{p_l\sigma}{p_h + p_l\sigma} e_l = \frac{e_h + e_l}{2}.$$

The utility of the high type individual is then given by

$$u\left(\frac{B}{2}\right) - v\left((e_h - \tilde{e}_s)\right) = u\left(\frac{B}{2}\right) - v\left(\frac{e_h - e_l}{2}\right),$$

which, by Assumption 1, is negative. When the cost of looking like a high type is relatively low, compared to the potential benefit a poor individual would receive from the service provider, conditionality of the service gives low type individuals an incentive to invest in 'good' appearance. This is what prevents high type individuals from signalling their type, so that they prefer not to request the service.

More generally, we cannot have an equilibrium with $p_h > 0$. Indeed, that would only happen if $s_g > 0$, which (given the linearity of the service provider's utility) implies that $s_g = \frac{B}{p_h + p_l}$, so that, by the additional assumption on θ, $u(s_g) > v(\theta)$, with the consequence that $p_l = 1$. In other words, any value of the service that convinces the high type individuals to request the service because it is at least as beneficial as the identity cost also convinces the low type individuals to request it because it brings more utility than the disutility of investing in appearance. The value of the service is then precisely $s_g = \frac{B}{p_h + 1}$. The identity cost is worth

$$v\left(e_h - \tilde{e}_s\right) = v\left(e_h - \frac{p_h e_h + e_l}{p_h + 1}\right) = v\left(\frac{e_h - e_l}{p_h + 1}\right).$$

The utility of the high type agent is then $u(\frac{B}{p_h+1}) - v(\frac{e_h - e_l}{p_h+1})$. Assumption 1 amounts to saying that this utility is negative for $p_h = 1$. In addition to this, given the assumptions

[4] In the general case of masses m_h and m_l of individuals, we would have

$$\tilde{e}_s = \frac{m_h p_h}{m_h p_h + m_l p_l \sigma} e_h + \frac{m_l p_l \sigma}{m_h p_h + m_l p_l \sigma} e_l = \frac{m_h e_h + m_l e_l}{m_h + m_l}.$$

that $u(0) = 0$ and u is concave, and $v(0) = 0$ and v is convex, the utility of the high type agent decreases as p_h decreases.[5] Again, the utility is negative and high type individuals prefer not to request the service.

The only possible equilibria require $p_h = 0$. This, in turn, implies that $s_g = 0$ and $p_l = 0$, that is, the service provider does not plan to allocate any service to those who would request it, and no one requests it. This is supported by the out-of-equilibrium belief that $\tilde{e}_s < \frac{\beta e_h + e_l}{\beta + 1}$, that is, the probability that an individual who demands the service is a high type is so low that the service provider's expected utility of allocating money to that individual is negative.

To sum up the results of this section, we formulate the following proposition:

Proposition 1
In a system where the service provider conditions the provision of a service on effort, under Assumptions 1 and 2.a, the only possible equilibrium is that no poor individual requests the service.

We need to add a remark that points towards the relevance of our distinction between vertical and horizontal conditionality. In the equilibrium just described, no individual claims the benefit. If Assumption 1 were not satisfied, then all individuals would claim the benefit. Of course, the poorer the individuals, the larger B appears, and the less likely are the assumptions. This is consistent with the evidence that vertical conditionality makes non-take-up income related (see, for instance, Blundell et al. (1988)). Horizontal conditionality, on the other hand, affects all poor people at the same means level in the same way.

Whether or not Assumption 2.a is likely to be satisfied depends on the specific characteristic the service provider would like to condition the service on. Parameter θ may capture different dimensions of the relationship between the service provider and the poor. One interpretation is that it is a parameter of the technology. For instance, whether or not it is possible to detect a drug addict depends on the technology. If it were possible for drug addicts to look like non-drug addicts, that is, θ were relatively small, non-addicts would likely not take up the benefit to avoid being mixed with drug addicts. Another interpretation of θ is that it is a policy parameter. Job search requirements for the unemployed are an example where θ is, in the main, set by policy makers. Finally, it may also depend on the characteristics of the poor people themselves. Among low types, some individuals may find it more or less costly to imitate a

[5]Note, indeed, that the assumptions on u imply that $u\left(\frac{B}{p_h+1}\right) = u\left(\frac{B}{2}\frac{2}{p_h+1}\right) < \frac{2}{p_h+1}u\left(\frac{B}{2}\right)$, whereas the assumptions on v imply that $v\left(\frac{e_h-e_l}{p_h+1}\right) = v\left(\frac{e_h-e_l}{2}\frac{2}{p_h+1}\right) > \frac{2}{p_h+1}v\left(\frac{e_h-e_l}{2}\right)$, with the consequence that $u\left(\frac{B}{p_h+1}\right) - v\left(\frac{e_h-e_l}{p_h+1}\right) < \frac{2}{p_h+1}\left(u\left(\frac{B}{2}\right) - v\left(\frac{e_h-e_l}{2}\right)\right) < 0$, the desired outcome.

high type.

Assumption 2.b: $u\left(\frac{B}{2}\right) < v(\theta) < u\left(B\right)$.

We now analyse the equilibria under the scenario when the cost of imitating the high type are relatively large compared to the benefit the poor individual can obtain. Let us first consider the behaviour of the low type individual. He will only invest in his appearance and take up the benefit when his utility by doing so is higher than when he does not invest and does not take up, that is when $u\left(\frac{B}{p_h+p_l\sigma}\right) - v\left(\theta\right) \geq 0$. Recall that $\frac{B}{2}$ is the minimum value of the benefit an individual can receive when all the budget is spent. With the assumption on θ, the mass of individuals requesting the benefit must be smaller than two so that it is worthwhile for the low type to demand the benefit; full take-up can therefore not be an equilibrium. As in the previous section, an equilibrium with $p_l\sigma > 0$ and $p_h = 0$ does not exist either, since the service provider would be unwilling to offer any positive benefit to the individuals who turn up, correctly assuming that they would all be of the low type.

A mixed strategy equilibrium exists. The amount of the benefit needs to be such that it leaves low type individuals indifferent between not requesting the benefit and incurring the mimicking cost to get the benefit. The number of low and high type individuals taking up the benefit needs to be such that it creates an identity cost which leaves high type individuals indifferent between requesting and not requesting the benefit. This gives us the following three equations:

$$\sigma = 1 \tag{2}$$

$$u\left(\frac{B}{p_h+p_l\sigma}\right) = v\left(e_h - (e_h\frac{p_h}{p_h+p_l\sigma} + e_l\frac{p_l\sigma}{p_h+p_l\sigma})\right) \tag{3}$$

$$u\left(\frac{B}{p_h+p_l\sigma}\right) = v\left(\theta\right) \tag{4}$$

so that the equilibrium values of the fractions of individuals requesting the service are:

$$p_h = \frac{B(e_h-e_l-\theta)}{u^{-1}(v(\theta))(e_h-e_l)} \tag{5}$$

$$p_l = \frac{B\theta}{u^{-1}(v(\theta))(e_h-e_l)}. \tag{6}$$

These fractions are positive.[6] The utility of the service provider is then equal to

$$\frac{B(e_h-e_l-(1+\beta)\theta)}{e_h-e_l},$$

[6]By concavity of u, $u(\frac{B}{2}) > \frac{u(B)}{2}$, so that assumptions 1 and 2.b imply that $v(\frac{e_h-e_l}{2}) > \frac{v(\theta)}{2}$, which, by convexity of v, implies that $\frac{e_h-e_l}{2} > \frac{\theta}{2}$, so that $e_h - e_l - \theta > 0$, guaranteeing $p_h > 0$.

which is not always positive. Therefore, either $e_h - e_l \geq (1+\beta)\theta$, in which case the service provider prefers the conditional policy with $s_g = u^{-1}(v(\theta))$. Again, by Assumption 1 and the assumptions on the shape of u and v, it is clear that $p_l < 1$ in this equilibrium, meaning that not all low type individuals will take up the benefit. Indeed, as proven above, in the case $p_l = 1$, the utility of high type individuals is equal to $u(\frac{B}{p_h+1}) - v(\frac{e_h-e_l}{p_h+1})$, which is strictly negative for all p_h. Using Assumption 2.b, we know that $0 < p_h < 1$. Therefore, as long as θ is not too large, inducing at least some of the low type individuals to take up the benefit, there will not be full take-up by the high type. This is because the value of the benefit would become too low to compensate for the identity cost incurred due to the presence of imitating, low types.

The other possibility is that $e_h - e_l < (1+\beta)\theta$, in which case the service provider prefers not to offer a benefit, $s_g = 0$, and the non-take-up equilibrium prevails.

Assumption 2.c: $v(\theta) \geq u(B)$.

When the cost of imitating the high type rises even further, that is, when Assumption 2.c holds, the mixed strategy equilibrium with at least some of the low-type individuals demanding the benefit, $p_l\sigma > 0$, disappears. When $v(\theta) \geq u(B)$, another, pure strategy, equilibrium exists in which all high type individuals demand the benefit and no low type individual demands it. When $p_h = 1$, the size of the utility of the benefit available becomes $u(\frac{B}{1+p_l\sigma})$, which is lower than $v(\theta)$, making it not worthwhile for the low type to invest in their appearance. Given that no low type demands the service, the high type individuals do not incur any identity cost, their utility is equal to $u(B)$ and they all are better off requesting the benefit. Finally, the service provider is willing to offer a benefit because only their preferred type demands it. His utility is maximal at B.

The result of this section is summarised in the following proposition.

Proposition 2
A. *Under Assumptions 1 and 2.b, in a system where the service provider conditions the provision of a benefit on effort, if $e_h - e_l \geq (1+\beta)\theta$, there exists a mixed strategy equilibrium where only a fraction smaller than 1 of the low type individuals demand the benefit and a positive fraction of high type individuals demand it. If $e_h - e_l < (1+\beta)\theta$, the non-take-up equilibrium prevails.*
B. *Under Assumptions 1 and 2.c, the only equilibrium is that no low type individual demands the benefit and all high type individuals demand it.*

Table 1: Agents' utilities as a function of the policy, for different values of θ

	High type		Low type		Service provider	
	Cond.	Unc.	Cond.	Unc.	Cond.	Unc.
Ass. 2.a	0	$u\left(\frac{B}{2}\right)$	0	$u\left(\frac{B}{2}\right)$	0	$(1-\beta)\frac{B}{2}$
Ass. 2.b, $e_h - e_l \geq (1+\beta)\theta$	0	$u\left(\frac{B}{2}\right)$	0	$u\left(\frac{B}{2}\right)$	$\frac{B(e_h-e_l-(1+\beta)\theta)}{e_h-e_l}$	$(1-\beta)\frac{B}{2}$
Ass. 2.b, $e_h - e_l < (1+\beta)\theta$	0	$u\left(\frac{B}{2}\right)$	0	$u\left(\frac{B}{2}\right)$	0	$(1-\beta)\frac{B}{2}$
Ass. 2.c	$u(B)$	$u\left(\frac{B}{2}\right)$	0	$u\left(\frac{B}{2}\right)$	B	$(1-\beta)\frac{B}{2}$

4 The Possible Pareto Dominance of an Unconditional Policy

We now analyse the unconditional policy in which the service provider commits to offering the same amount of benefits to all claimants, irrespective of whether they look 'good' or 'bad'. We let $s = s_g = s_b$ denote the unique amount of the benefit.

In Stage 2, we either have

$$s = \frac{B}{p_h + p_l},$$

if the expected utility of allocating money to the requesting individuals is positive, or $s = 0$ if it is negative.

The key difference with the previous case is that low type poor individuals will no longer invest in their appearance, because it involves bearing the cost θ without any additional advantage. As a consequence, the identity cost of high type individuals disappears, so that they all choose to request the service as soon as $s > 0$. As a result, the only equilibrium is the full take-up, that is, $p_h = p_l = 1$, $\sigma = 0$ and $s = \frac{B}{2}$, independently of whether Assumption 2.a, 2.b or 2.c holds. As a result, both high and low type poor individuals have a utility of $u\left(\frac{B}{2}\right)$, and the service provider has a utility of $(1-\beta)\frac{B}{2}$.

We are now equipped to compare the equilibria following the conditional policy with the unconditional policy. The following table summarizes the utilities of the different agents under the two policies, as a function of the value of $v(\theta)$.

We deduce from the table the following proposition.

Proposition 3

A. *Under Assumptions 1 and 2.a, the unconditional policy leads to a full take-up equilibrium. That outcome Pareto dominates the non-take-up outcome generated by the conditional policy.*

B. *Under Assumptions 1 and 2.b, the conditional policy may provide a higher utility to the service provider (depending on the value of e_h, e_l, θ and β), but, for sufficiently low values of β, the unconditional policy leads to a full take-up equilibrium that Pareto dominates the non-take-up outcome generated by the conditional policy.*
C. *Under Assumptions 1 and 2.b, the service provider unambiguously prefers the conditional policy, which, compared to the unconditional policy, provides a higher utility to the high type and a lower utility to the low type.*

The result of this section provides an argument against horizontal conditionality of welfare benefits when the cost of imitating the high type are relatively low. The typical argument for conditioning is that it gives the right incentives to poor people. Our model of benefit design shows that horizontal conditionality may have exactly the opposite effect, deterring those who deserve the benefit from participating in welfare programmes, thus exacerbating the situation of the worst off.

When θ is likely to be high, however, conditionality may be preferable. When policy makers introduce conditions to a service, it is usually in order to prevent the type with the undesirable characteristic from taking up the benefit. The premise of this section is that when the imposed conditions are easily fulfilled by even the low type, it may be preferable not to impose any conditions at all. If we interpret θ as a technology, then policy makers should evaluate the efficacy of the technology they have available. In the case of testing for drug abuse, for instance, hair analysis can detect long term patterns of drug abuse, while urine analysis is more suitable to detect only very recent drug use (DuPont and Baumgartner, 1995). The service provider may thus prefer to use the former technology. If amongst the low type there is a subpopulation of individuals who are known to have low cost of imitation, harder conditions may be placed on these individuals.

Unconditionality is a fully revealing policy. No potential beneficiary will alter her or his appearance. As a result, this policy may suffer from a commitment problem, as the social service provider typically wishes to exclude the low type individuals from the benefit. We assume away this problem here. After all, social service providers are operated by individuals, working on behalf on the government, whose hands can be tied by law.

5 Extensions

In this section we present four extensions of the model. We only consider the case where the cost of imitating the high type is relatively low, that is, when Assumption 2.a is satisfied. It is, indeed, clear that conditional welfare benefits are the optimal policy when the cost of imitating the high type is so high that only high type individuals

benefit from the service, and signal their type. The difficult task is to prove that our Pareto dominance result is robust to changes in the model.

5.1 Identity Benefits

Up to now, we have assumed that low type individuals do not derive any benefit from being perceived as a high type. When we relax this assumption, that is, when we assume that low type individuals enjoy being perceived as having made a higher effort than they actually have, the low types have even stronger incentives to imitate the high type under the conditional policy. It follows that the only possible equilibrium remains the non-take-up equilibrium. Given the additional incentives to look 'good' for the low type, it is not clear whether the unconditional policy will lead to a full take-up equilibrium where both high and low type individuals reveal their true type and no identity costs occur for the high type. This is because conditionality is now not the only incentive for the low types to invest in their appearance. We formally show this in Section A.1 of the appendix.

5.2 Heterogeneity in Identity Weights

Until now we have assumed that the weight individuals place on identity in the assessment of their well-being is homogenous across individuals and equal to one. We can easily extend the analysis to allow for heterogeneity in these weights; individuals with a lower weight, possess a higher level of self-confidence, and therefore care less about how they are regarded by others. Let us denote the weights by φ. We assume they are distributed over an interval $[\underline{\varphi}, \overline{\varphi}]$, according to a cumulative distribution function $G(\varphi)$, continuous over the interior of the interval.[7] We rewrite the utility of poor individuals, as follows:

$$U(m, I) = u(m) - \varphi v(I(e - \tilde{e}_s)).$$

What we proved above corresponds to the case in which $\underline{\varphi} \geq 1$. Let us prove, now, that if a positive mass of individuals has a weight $\varphi < 1$, then, under some additional assumptions, we can have an equilibrium where a fraction $p_h > 0$ of high type individuals demands the benefit. Note that as soon as the service provider is willing to offer a positive benefit, all low type individuals will find it worthwhile to claim it and the entire budget B will be spent.

[7] We only specify the weights for high type individuals. We ignore the distribution of φ for low type individuals as we are only considering the case where low type individuals never suffer any identity cost.

The utility of a high type individual when they takes up the benefit is given by

$$u\left(\frac{B}{p_h+1}\right)-\varphi v\left(\left(e_h-\left(\frac{p_h}{p_h+1}e_h+\frac{1}{p_h+1}e_l\right)\right)\right).$$

Rearranging the terms, we deduce that high type individuals with $\varphi<\varphi^*$,

$$\varphi^*=\frac{u\left(\frac{B}{p_h+1}\right)}{v\left(\frac{e_h-e_l}{p_h+1}\right)},$$

are willing to take up the benefit. The equilibrium value of p_h is then given implicitly by:

$$p_h^*=G\left(\frac{u\left(\frac{B}{p_h^*+1}\right)}{v\left(\frac{e_h-e_l}{p_h^*+1}\right)}\right). \tag{7}$$

All low type individuals are better off by requesting the benefit. Indeed, by assumption 2, $u\left(\frac{B}{2}\right)>v\left(\theta\right)$. Their utility if they request the service is $u\left(\frac{B}{p_h+1}\right)-v\left(\theta\right)$, which is clearly positive. No additional assumption is needed.

The service provider is willing to provide a positive benefit as long as

$$p_h\frac{B}{p_h+1}-\beta\frac{B}{p_h+1}\geq 0,$$

that is, as long as $\beta\leq p_h^*$. To sum up, under the additional assumptions that the lowest weight high type individuals place on identity is sufficiently small, $\underline{\varphi}<\varphi^*$, and the disutility of the provider to serve a low type poor is sufficiently small as well, we have an equilibrium in which a fraction of the high type poor requests the service.

Does this equilibrium remain Pareto dominated by the full take-up equilibrium of the unconditional policy? The answer is yes, under additional assumptions. A high type individual remains strictly better off under the unconditional policy, if and only if,

$$u\left(\frac{B}{p_h+1}\right)-\varphi v\left(\left(e_h-\left(\frac{p_h}{p_h+1}e_h+\frac{1}{p_h+1}e_l\right)\right)\right)<u\left(\frac{B}{2}\right),$$

which is equivalent to

$$\varphi>\frac{u\left(\frac{B}{p_h+1}\right)-u\left(\frac{B}{2}\right)}{v\left(\frac{e_h-e_l}{p_h+1}\right)}$$

As a result, using Eq. (7), under the additional assumption that

$$\underline{\varphi}>\frac{u\left(\frac{B}{p_h^*+1}\right)-u\left(\frac{B}{2}\right)}{v\left(\frac{e_h-e_l}{p_h^*+1}\right)}$$

all high type individuals strictly prefer the unconditional policy.

A low type individual strictly prefers the unconditional policy, if and only if,

$$u\left(\frac{B}{p_h+1}\right) - v\left(\theta\right) < u\left(\frac{B}{2}\right),$$

which holds true, using Eq. (7) again, provided we further impose

$$\theta > v^{-1}\left(u\left(\frac{B}{p_h^*+1}\right) - u\left(\frac{B}{2}\right)\right).$$

The service provider strictly prefers the unconditional policy if

$$p_h\frac{B}{p_h+1} - \beta\frac{B}{p_h+1} < \frac{B}{2} - \beta\frac{B}{2},$$

which will always be true, given that the utility of the provider increases as the fraction of high type individuals taking up the benefit increases (keeping the response of the low type poor constant).

To summarise, under the additional assumptions that the minimal weight high type individuals place on identity cost is not too small, and that the cost of imitating the high type poor is sufficiently large, the outcome under the unconditional policy Pareto dominates the conditional policy.

5.3 Endogenous Effort

In the previous section, effort was assumed to be exogenous. If effort is endogenous, we need to take account of the disincentive effect of the identity cost on effort when studying the interplay between identity costs, take-up and conditionality.[8] Under some additional assumptions we are able to prove that the only possible equilibrium is the non-take-up equilibrium. The complete proof of this result is relegated to Section A.2 in the appendix. Those additional assumptions are: (1) the technology of the service provider does not allow him to observe the exact level of effort of the individual, but only whether this is above a certain threshold, (2) the amount of the benefit when all individuals demand it is high compared to the cost of effort a low type would have to exert to be considered eligible, and (3) the benefits a high type could receive, under a scenario where all low types demand it, minus the identity cost they would incur bring them less utility than exerting the optimal level of effort without taking up the benefit.

[8] We assume here that the cost of effort is not just a pure signalling cost but that it provides some beneficial outcome to individuals such as material resources, immaterial resources, social relationships, etc.

Under these assumptions, all low type individuals find it worthwhile to exert the effort to reach the threshold and to be considered eligible, and demand the benefit. This, in turn, means that identity cost for the high types is too high to make taking up the benefit worthwhile, and they refrain from doing so. Knowing this, the service provider, again, is not willing to offer any benefit. This results in the non-take-up equilibrium.

Note that under endogenous effort, the conditionality imposed by the service provider induces low type individuals to exert a higher level of effort than their optimal effort, in the absence of any social benefit. The opposite, however, is true for high type individuals, were they to take up the benefit. An unconditional policy would induce low and high types to exert the same effort levels as in the scenario without benefits. Both high and low types would request the benefit, the service provider would observe the types perfectly and high type individuals would not suffer any identity costs. For the same reasons as with exogenous effort levels, this situation would Pareto dominate the non-take-up equilibrium.

5.4 Optimality of the Unconditional Policy

In Proposition 3, above, we proved that under some conditions, a non-conditional policy Pareto dominates a conditional one. We did not prove, on the other hand, that the unconditional policy is the optimal policy for the social service provider. It is not. A conditional policy, in which the difference between the benefits assigned to 'good-looking' and 'bad-looking' individuals is exactly equal to the cost of mimicking the high type individuals, is optimal. With such a policy, no low type individual would pay the cost of being pooled with high type individuals; no high type individual would therefore be willing to drop the benefit. This follows from the assumption that no low type individual tries to mimic the high type as long as the difference between the amounts of benefits is lower than its maximal value, θ.

In this extension, we generalise the model in such a way that the unconditional policy is optimal. The generalisation is that both the identity weights and the cost of mimicking are heterogenous, with the consequence that, on the one hand, some low type individuals begin to mimic the high type as soon as there is a difference between the two benefit levels, and on the other hand, some high type individuals prefer not to take up as soon as the service provider is unable to identify them perfectly.

Before we analyse this context formally, we need to comment on the form that a differential benefit policy may take. We do not believe that the service provider would instigate a programme in which the benefit depends on the appearance of potential beneficiaries. A likely policy would be one where a benefit of s_g is announced, but the receipt of which is conditional on satisfying a certain criteria, not satisfying this criteria brings about sanctions, the value of which, in our model, corresponds to the difference $s_g - s_b$. The larger the sanction, the deeper the conditionality. Sanctions are

a frequent feature in the design of conditional welfare benefits.

We will develop this extension under the linearity assumptions that $u(m) = m$ and $v(I) = I$. Whilst this will simplify the notation considerably, it constitutes a real restriction. It should be clear from the result below, however, that what matters is the behaviour of individuals with extreme parameter values, so that a sufficient condition in the non-linear model so that the result presented in this extension holds is that $u'(0) \leq v'(0)$.

We assume that the cost to pay to avoid the sanction, or, in our initial phrasing, to 'look good', θ, is distributed according to some distribution function, F, defined over the interval $[0, \bar{\theta}]$. This means that when benefits are s_g and s_b for the 'good-looking' and 'bad-looking' individuals, then a fraction $F(s_g - s_b)$ of low type individuals prefer to pay the cost of mimicking and receive the larger amount. We adjust Assumption 2.a to this new context by imposing the following

Assumption 3.a: $\bar{\theta} < \frac{B}{2}$.

On the other hand, the weight φ that high type individuals assign to the identity cost is distributed among them according to a distribution function, G, defined over the interval $[\underline{\varphi}, \bar{\varphi}]$. The upper bound $\bar{\varphi}$ is such that as soon as some low type individuals are pooled among the 'good-looking' individuals and the service provider knows it, the highest φ individuals prefer to give up the benefit amount s_g and do not request the service.

We can reduce the policy to the choice of δ, the difference between the benefits assigned to 'good-looking' and 'bad-looking' individuals, $\delta = s_g - s_b$. We need to prove that the value of δ that maximises the utility of the service provider is $\delta = 0$.

For a given policy δ, a fraction, $F(\delta)$, of the low type individuals pay the cost to look 'good'. As a consequence, a fraction of the high type individuals choose not to request the service, to avoid the identity cost. Let us denote by $\varphi(\delta)$ the threshold above which high type individuals weight identity so much that they do not take up the service. They are a fraction, $1 - G(\varphi(\delta))$, of high type individuals. Consequently, the expected value of effort among the 'good-looking' individuals is equal to

$$\tilde{e} = \frac{G(\varphi(\delta))e_h + F(\delta)e_l}{G(\varphi(\delta)) + F(\delta)} \tag{8}$$

The budget B is then allocated between 'good-looking' and 'bad-looking' individuals, according to the following equation,

$$B = [G(\varphi(\delta)) + F(\delta)]s_g + (1 - F(\delta))(s_g - \delta),$$

which can be rewritten as

$$s_g = \frac{B + (1 - F(\delta))\delta}{1 + G(\varphi(\delta))}. \tag{9}$$

The threshold $\varphi(\delta)$ is determined by the equality $s_g = \varphi(\delta)(e_h - \tilde{e})$, so that it is implicitly defined by Eqs. 8 and 9, as a function of exogenous variables F, G, B and policy δ.

Here, we need to add an assumption on the relationship between F and G. Clearly, if high type individuals are not very sensitive to the identity cost, the social service provider has an interest to increase δ and allocate as much as possible to each high type individual. On the other hand, if it is easy for low type individuals to mimic the high type, because the monitoring technology is not very efficient, increasing δ may convince a large fraction of individuals to drop out and globally decrease the total amount of money allocated to the high type. We impose the neutral assumption that one additional low type individual in the pool of 'good-looking' service beneficiaries deters one additional high type individual from requesting the service

Assumption 3.b: $G(\varphi(\delta)) = 1 - F(\delta)$.

The utility of the service provider can be written as follows

$$s_g(1 - F(\delta)) - \beta \left(s_g F(\delta) + (s_g - \delta)(1 - F(\delta)) \right). \tag{10}$$

Given the linearity of the utility function, either the budget is fully spent, or no money is spent and the utility is equal to 0. If $\delta = 0$, the utility is strictly positive (remember that $\beta < 1$). That proves that, at the optimal policy, the budget must be fully spent. Consequently, the optimal policy can also be deduced from the maximisation of the amount of money transferred to high type individuals, $s_g(1 - F(\delta))$. Using Eq. 9 and Assumption 3.b, we can deduce that the service provider has to fix δ so as to maximise

$$\frac{\left(B + (1 - F(\delta))\delta\right)\left(1 - F(\delta)\right)}{2 - F(\delta)}. \tag{11}$$

We derive the solution to this problem under the simplifying assumption that θ is uniformly distributed

Assumption 3.c: For all $0 \leq \delta \leq \bar{\theta}$, $F(\delta) = f\delta$, $f\bar{\theta} = 1$.

Differentiating Eq. 11 with respect to δ and rearranging the terms gives us the following derivative.

$$\frac{\left((1 - 3\delta f) + (1 - 2\delta f)(1 - \delta f)\right)\left(1 - F(\delta)\right) - fB}{(2 - F(\delta))^2}. \tag{12}$$

For $\delta = 0$, the sign of the derivative is the sign of $2 - fB$, which, according to Assumptions 3.a and 3.c, is negative. The derivative decreases as δ increases, proving that utility of the service provider is maximised at $\delta = 0$, the desired outcome.

6 Conclusion

In this paper, we developed a simple model of welfare non-take-up where the identity costs associated with participation in welfare programmes arises endogenously through the failure of service providers to correctly appraise the efforts made by the poor.

Our main message is that horizontal conditioning of social benefits can be harmful to all individuals involved. A benefit condition is horizontal when the condition is not based on means of living but when it is based on another characteristic that may be viewed by the service provider as indirectly influencing means, e.g. effort, but that determines individuals' identity. Under the assumption that poor people suffer from an undervaluation of that characteristic by the social service provider, an unconditional policy may Pareto dominate horizontal conditionality.

We do not mean, of course, that horizontal conditionality is always harmful. A condition may help the high type poor to signal their type. A case in point is that of drug testing, where the cost of imitation is relatively high. Therefore, the policy implication of this paper is that welfare benefit should be provided under horizontal conditions, only if the technology used to monitor the variables on which conditions are imposed is sufficiently accurate. If it is the case, welfare conditions may yield the desired outcome. If it is not the case, welfare conditions may create negative incentives among poor individuals with the consequence that it is Pareto inferior to an unconditional policy.

In the introduction we cited evidence that poor people care about how they are being treated by service providers. Some of those examples lead us to think that non-take-up may be related to that psychological mechanism. None of the examples are, of course, a real test of the theory. A possible direct test of the theory would involve a change in the monitoring technology. Indeed, the model predicts that an improvement in the accuracy of the monitoring technology should affect the composition of the population of beneficiaries of a horizontally conditioned welfare benefit. Individuals paying the cost to appear as if they satisfy the conditions are expected to stop requesting the benefit. Individuals who satisfy the conditions, but suffer from being pooled with those who do not satisfy them, will begin requesting the benefit. Such a change in the composition of the requesting population would not be due to stigma, lack of information, or other transaction costs.[9]

We believe this paper illustrates the fact that identity views and reflected appraisals, in particular, are key to the understanding of the mechanisms that prevent poor people from benefiting from the services that are dedicated to help them. A shift in the focus of the analysis, from the design of anti-poverty programmes, or the characteristics of

[9]Cockx et al. (2014) propose another argument for why an increase in the accuracy of the technology of job search monitoring may induce some workers to opt in. Their argument is related to time inconsistency and only involve self-centred preferences.

the poor, towards the interaction between the poor and service providers, is required.

References

Akerlof, George A., "The Economics of "Tagging" as Applied to the Optimal Income Tax, Welfare Programs, and Manpower Planning," *The American Economic Review*, March 1978, *68* (1), 8–19.

_ **and Rachel E. Kranton**, "Economics and Identity," *Quarterly Journal of Economics*, 2000, *115*, 715–753.

ATD Fourth World, "Not too hard to reach," Technical Report ATD Fourth World Publications, ATD Fourth World 2006.

Battigalli, Pierpaolo and Martin Dufwenberg, "Dynamic psychological games," *Journal of Economic Theory*, January 2009, *144* (1), 1–35.

Bernheim, B. Douglas, "A Theory of Conformity," *The Journal of Political Economy*, October 1994, *102* (5), 841–877.

Besley, Timothy, "Means Testing versus Universal Provision in Poverty Alleviation Programmes," *Economica*, February 1990, *57* (225), 119–129.

_ **and Stephen Coate**, "Understanding welfare stigma: Taxpayer resentment and statistical discrimination," *Journal of Public Economics*, July 1992, *48* (2), 165–183.

_ **and** _ , "Workfare versus Welfare: Incentive Arguments for Work Requirements in Poverty-Alleviation Programs," *The American Economic Review*, March 1992, *82* (1), 249–261.

Blundell, Richard, Vanessa Fry, and Ian Walker, "Modelling the take-up of means-tested benefits: the case of housing benefits in the United Kingdom," *The Economic Journal*, 1988, pp. 58–74.

Burke, Peter J., "Identity Processes and Social Stress," *American Sociological Review*, December 1991, *56* (6), 836–849.

_ **and Michael M. Harrod**, "Too much of a good thing?," *Social Psychology Quarterly*, 2005, *68* (4), 359–374.

Caliendo, Marco, Konstantinos Tatsiramos, and Arne Uhlendorff, "Benefit duration, unemployment duration and job match quality: A regression-discontinuity approach," *Journal of Applied Econometrics*, June 2013, *28* (3), 604–627.

Cockx, Bart, Corinna Ghirelli, and Bruno Van der Linden, "Is it socially efficient to impose job search requirements on unemployed benefit claimants with hyperbolic preferences?," *Journal of Public Economics*, 2014, *113* (C), 80–95.

Currie, Janet and Firouz Gahvari, "Transfers in Cash and In-Kind: Theory Meets the Data," *Journal of Economic Literature*, 2008, *46* (2), pp.333–383.

DuPont, Robert L. and Werner A. Baumgartner, "Drug testing by urine and hair analysis: complementary features and scientific issues," *Forensic Science International*, 1995, *70* (1–3), 63 – 76. ¡ce:title¿Hair Analysis II¡/ce:title¿.

Geanakoplos, John, David Pearce, and Ennio Stacchetti, "Psychological games and sequential rationality," *Games and Economic Behavior*, March 1989, *1* (1), 60–79.

Gerards, Ruus and Riccardo Welters, "Impact of financial pressure on unemployed job search, job find success and job quality," Technical Report, ROA-RM-2016/8, Maastricht University 2016.

Jones, Stephen C., "Self- and Interpersonal Evaluations: Esteem Theories versus Consistency Theories.," *Psychological Bulletin*, 1973, *79*, 185–199.

Kalkhoff, Will, Richard T. Serpe, Joshua Pollock, Brennan Miller, and Matthew Pfeiffer, "Neural Processing of Identity-Relevant Feedback: An Electroencephalographic Study.," in Jan E. Stets and Richard T. Serpe, eds., *New Directions in Identity Theory and Research*, New York: Oxford University Press, 2016.

Kaplan, Howard B., "The Self-Esteem Motive," in H. B. Kaplan, ed., *Self-Attitudes and Deviant Behavior*, Pacific Palisades, CA: Goodyear, 1975, pp. 10–31.

Moffitt, Robert, "An Economic Model of Welfare Stigma," *The American Economic Review*, 1983, *73* (5), 1023–1035.

Narayan, Deepa, Kay Schafft, Anne Rademacher, Raj Patel, and Sarah Koch-Schulte, *Voices of the Poor: Volume 1: Can Anyone Hear Us?*, first edition ed., A World Bank Publication, May 2000.

Petrogonlo, Barbara, "The long-term effects of job search requirements: Evidence from the UK JSA reform," *Journal of Public Economics*, June 2009, *93* (5), 1234–1253.

Rogers, Carl, *On Becoming a Person: A Therapist's View of Psychotherapy*, Boston: Houghton Mifflin, 1961.

Stets, Jan E. and Richard T. Serpe, *New Directions in Identity Theory and Research*, New York: Oxford University Press, 2016.

van den Berg, Gerard and Johan Vikstrom, "Monitoring Job Offer Decisions, Punishments, Exit to Work, and Job Quality," *Scandinavian Journal of Economics*, 2014, *116* (2), 284–334.

Appendix

A.1 Identity Benefits

In the previous section we made the assumption that the low type never suffers any identity cost because their effort is never underestimated. Consider the case where the low type individual cares about positive reflected appraisals, that is, being perceived as having made a higher effort than they actually have.[10] We rewrite the identity component of the utility function as $I = e - \tilde{e}_s$, $e \in \{e_h, e_l\}$, so that individuals with $e < \tilde{e}_s$ enjoy a benefit from positive reflected appraisals.

For the conditional policy, the low type individuals have even stronger incentives to imitate the high type individuals. Their utility in the full take-up equilibrium, with identity benefits from positive reflected appraisals, is higher than without:

$$u\left(\frac{B}{2}\right) - v\left(\theta - \frac{e_l - e_h}{2}\right) > u\left(\frac{B}{2}\right) - v\left(\theta\right).$$

The only equilibrium remains the non-take-up equilibrium.

In the unconditional case, the full take-up equilibrium is sustained as long as identity utility for the low type individual does not completely offset the cost of investing in appearance, that is, when

$$u\left(\frac{B}{2}\right) - v\left(\theta - \frac{e_l - e_h}{2}\right) < u\left(\frac{B}{2}\right)$$

which is satisfied for $e_h - e_l < 2\theta$. If this condition is not satisfied, that is, if the possible gains from reflected appraisals are high enough for the low type, relative to

[10]Preferences for favourable social feedback despite less favorable internal self-views have been widely documented in social psychology and psychology literature. When certain attributes are generally valued in a society, being perceived as having those attributes can enhance people's self-esteem, which explains why people strive for positive social perceptions. This is in contrast to our initial notion of identity being motivated by a need for self-verification, that is, the confirmation of one's self-view by their environment. Bernheim (1994)'s model of conformity fits this theory of self-enhancement through social acceptance.

the cost of investing in appearance and looking 'good', the full take-up equilibrium will break down. This is because all low type individuals will now find it worthwhile to invest in their appearance due to the identity benefit associated with positive reflected appraisals, which in turn will discourage the high type individuals from requesting the benefit, since they will suffer the same identity cost as under the conditional regime.

A.2 Endogenising effort

In this appendix, we prove a variant of Propositions 2 and 3 under the assumption of endogenous effort. This is illustrated in Figure 1 below. We now assume that the cost of effort is $\frac{c(e)}{\rho}$, where $c(\cdot)$ is an increasing and convex function such that $c(0) = 0$ and $\rho > 0$ is the type of the individual; the larger ρ, the lower the cost of effort, or, equivalently, the larger the ability to conform to the social service provider's views on effort. Now, if we assume that c is a pure signaling cost that is imperfectly observed by the service provider, and is only incurred by poor individuals under conditionality of the service provision, the result that unconditionality dominates conditionality will be obtained in a straightforward way.

Consequently, we assume that effort provides some beneficial outcome to the poor individuals (such as material resources, immaterial resources, social relationships, etc.). As a consequence, we now assume that utility is given by

$$U(e, I) = u(e + s) - \frac{c(e)}{\rho} - v(I).$$

Without a benefit system, a poor individual chooses effort level e to maximise $u(e) - \frac{c(e)}{\rho}$. Let us assume that individuals are either high effort, in which case they are characterised by ρ_h, or low effort, in which case they are characterised by ρ_l, $\rho_l < \rho_h$. The optimal effort levels are e_h^* and e_l^* defined by,

$$\frac{c'(e_h^*)}{u'(e_h^*)} = \rho_h, \frac{c'(e_l^*)}{u'(e_l^*)} = \rho_l.$$

The figure presents the functions $u(e) - \frac{c(e)}{\rho}$ of both types of individuals.

The service provider has the same utility function and budget constraint as before. We could assume that the service provider can observe effort levels precisely, thereby conditioning benefit to observing an effort level of e_h^*. The story would then be identical to the one found in the previous sections. We do not need such an assumption. It is sufficient to assume that the service provider has an imperfect technology that allows them to identify whether an individual's effort is lower or larger than $\overline{e}$, with

$$e_l^* < \overline{e} < e_h^*.$$

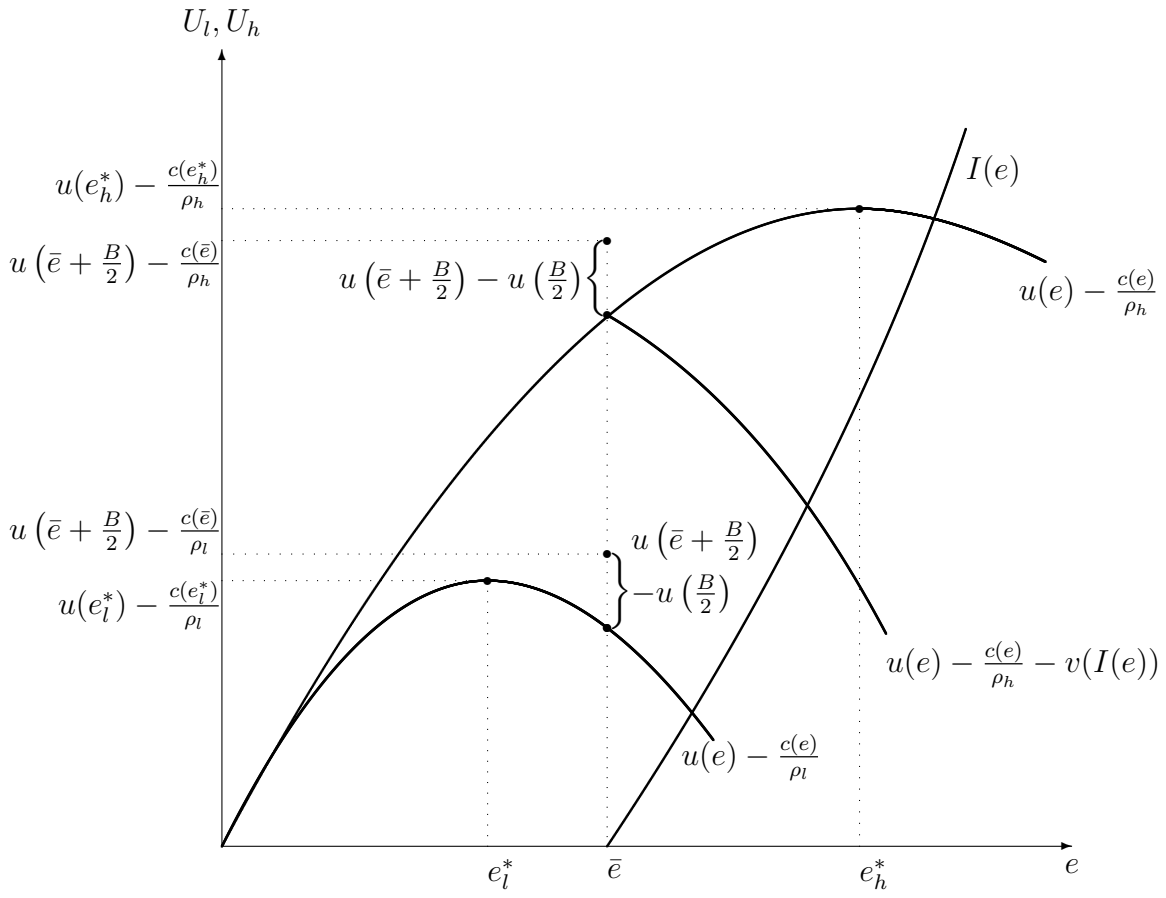

Figure 1: Endogenous effort

Note that the smaller the difference $e_h^* - \overline{e}$, the better the technology. A low type individual has the choice between not requesting the benefit, in which case his or her utility is $u(e_l^*) - \frac{c(e_l^*)}{\rho_l}$, or requesting the benefit, s, which requires that he or she performs the minimal effort level to appear as if they were high effort, in which case his or her utility is $u(\overline{e} + s) - \frac{c(\overline{e})}{\rho_l}$. We assume that it is rational for that individual to request the benefit if all poor individuals request it, that is, we assume

$$u(e_l^*) - \frac{c(e_l^*)}{\rho_l} < u\left(\overline{e} + \frac{B}{2}\right) - \frac{c(\overline{e})}{\rho_l}. \tag{13}$$

This first assumption is illustrated in the figure.

A high type individual has the choice between not requesting the benefit, in which case his or her utility is $u(e_h^*) - \frac{c(e_h^*)}{\rho_h}$, or requesting the benefit, s. In the latter case, he or she may suffer an identity cost, if low type individuals have decided to perform exactly $\overline{e}$. Let e_h denote the average effort level of the other high type individuals who request the benefit (recall that there is a continuum of individuals, so that one high type individual alone is unable to affect the beliefs of the service provider). With an effort level of e, a high type individual suffers an identity loss of $e - \frac{p_h e_h + p_l \overline{e}}{p_h + p_l}$. That individual faces the following problem

$$\max_{e \geq \overline{e}} u(e + s) - \frac{c(e)}{\rho_h} - v\left(\left(e - \frac{p_h e_h + p_l \overline{e}}{p_h + p_l}\right)\right).$$

The optimal effort level is $e_h^{**} \geq \overline{e}$. Clearly, $e_h^{**} < e_h^*$. In the graph, $e_h^{**} = \overline{e}$, the material benefit of effort is equal to the identity cost of it, so that the increasing cost of effort makes it rational to stop at the lowest effort level that guarantees receiving s. The only possible equilibrium value of effort for the high type individuals is thus $\overline{e}$. To reproduce the result of the previous sections, we assume that, in this case, it is preferable for that individual not to request the service, that is, we assume

$$u(e_h^*) - \frac{c(e_h^*)}{\rho_h} > u(e_h^{**} + \frac{B}{2}) - \frac{c(e_h^{**})}{\rho_h} - v\left(\frac{e_h^{**} - \overline{e}}{2}\right), \tag{14}$$

where, again, number two appears in the denominator because of our assumption on the unit mass of both types of individuals.

This second assumption is also illustrated in the figure.

Under the two assumptions contained in equations (13) and (14), we still obtain that the non-take-up outcome is the only equilibrium outcome under a horizontally conditional policy.

If the service provider removes the conditionality, then high effort and low type individuals will rationally choose effort levels e_h^* and e_l^*, defined above, high type individuals will be identified as high effort (because only they have a larger effort level than $\overline{e}$), so that they will not suffer any identity cost. All individuals will receive $\frac{B}{2}$, and, again, this equilibrium Pareto dominates the previous one.