



Selfish bakers, caring nurses? A model of work motivation[☆]

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ABSTRACT

Work contributes to people's self-image in important ways. We propose a model in which effort is unobservable and where individuals have a preference for *being important to others*. This gives the following predictions: (1) if a worker's effort is paid by his marginal productivity (bakers), effort is just like in the standard model. (2) If a worker's wage is unaffected by his effort (nurses), more effort is provided than in the standard model. (3) To prevent that shirkers become nurses, nurses' wages must be kept strictly lower than bakers' income. At this wage level there will be too few nurses. (4) Overinvestment in nursing equipment can be justified as a means to attract motivated nurses. (5) Even with full income compensation, both nurses and bakers may experience a net utility loss when losing their job. (6) Similarly, both nurses and bakers may prefer work to welfare, even with full income compensation.

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"It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest" (Smith, 1776, par. I.2.2).

"How selfish soever man may be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him." (Smith, 1759, par. I.I.I)

1. Introduction

The *Homo Oeconomicus* model, which assumes that individuals care only about their own access to goods and services while keeping their own efforts low, has long been the benchmark for economic analyses of labor markets and worker behavior. In many contexts, empirical evidence has indeed proved to be nicely consistent with this model (e.g. Lazear, 2000). Nevertheless, in other cases the *Homo Oeconomicus* predictions seem too stark. Specifically, if a worker's effort does not affect his pecuniary payoff, a *Homo Oeconomicus* employee will shirk as much as possible – regardless of the possible consequences for others. Anyone who has spent some time at a hospital, a school, or a university, knows that although this description

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might fit the behavior of some individuals, it definitely does not fit all (Heyes, 2004). Within health economics, the need to reconcile theoretical predictions with empirical evidence has in fact led numerous scholars to assume that physicians have altruistic preferences towards their patients.¹ This approach, however, may be considered somewhat *ad hoc*, since it is not clear why physicians would generally be more altruistic than others.

Similarly, the *Homo Oeconomicus* predictions make Scandinavian welfare states appear almost as logical inconsistencies. While studies indicate that social insurance generosity does increase the number of recipients and spell duration (e.g. Røed and Zhang, 2005; Johansson and Palme, 2005), such effects are much less pronounced than one might expect. In Norway, for example, employees have the right, within certain limits, to claim sick leave with full wage compensation based only on self-declared sickness (no physician's sickness certificate); still such self-declared sick leaves constitute only about 10 percent of the total level permitted by the rules (Eielsen, 2008; see also e.g. Aronsson et al., 2000).

For *Homo Oeconomicus*, work affects utility only in terms of lost leisure (and, of course, through the income it generates). Thus, any utility loss associated with unemployment must be due to income loss. If unemployment benefits provided full income compensation, becoming unemployed would necessarily increase *Homo Oeconomicus'* utility, due to increased leisure. Substantial empirical evidence, however, shows that while the relationship between income and happiness seems surprisingly weak, unemployment is a major cause of reduced happiness and life satisfaction (see, for example, Dolan et al., 2008; Theodossiou, 1998; Oswald, 1997). All this may indicate that some aspect of work, wage payment aside, is valued by workers.

In the present paper, we propose a model of work motivation. In our model, workers have a preference for a self-image as someone who is important to others. The strength of this preference, however, may vary between individuals. These assumptions are in line with evidence reported by, among others, Crewson (1997),² and lead to predictions consistent with the phenomena discussed above.

When effort is remunerated by its marginal productivity, workers' choice of effort will be equivalent to the *Homo Oeconomicus* predictions. However, in jobs where neither individual effort nor individual productivity is verifiable, workers will exert more effort than *Homo Oeconomicus*. Thus, a given person's effort choice may be quite consistent with the traditional model if she works as a baker, but not if she switches jobs and becomes a nurse. Turning next to the issue of self-selection into different occupations, we show that under plausible conditions, those with intermediate preferences for being important will seek employment in the sector where effort is rewarded by its marginal productivity, while individuals with the *highest* and *lowest* work motivation are attracted to jobs where effort cannot be verified: The highly motivated are attracted by the opportunity to be important; the poorly motivated are attracted by the opportunity to shirk.

Since behavior in perfectly competitive market jobs is unaffected by the preference to be important, it is socially desirable that poorly motivated workers choose employment in jobs where economic incentives prevent shirking (bakers). This can be achieved by keeping wages low in jobs with unverifiable effort (nurses). Hence, while both the profit maximizing behavior of the baker and the other-regarding behavior of the nurse are consistent with the same underlying preferences, low wages can make strongly other-regarding individuals self-select into the nursing sector.

If nurses' wage is kept sufficiently low to keep shirkers out, the nursing sector will be strictly smaller than the first-best optimum. We show, however, that there may be other ways to recruit the highly motivated than increasing the wage: nursing jobs will become more attractive, but only to motivated workers, if one invests in capital equipment that increases nurses' efficiency in helping others. This, in fact, provides an argument for overinvestment in certain types of public sector capital; for example better diagnostic equipment in hospitals, or library resources in universities and schools.

Living off welfare instead of working is detrimental for the sense of being important to others: the welfare recipient produces nothing, and his consumption must be financed by others' tax payments. The gain in terms of increased leisure must thus be weighted against the self-image loss. We show that workers with a sufficiently strong work motivation, including both nurses and bakers, will experience a strict utility loss if they lose their job, even in the case of full wage compensation. Such individuals will prefer work to living off welfare if they have the choice. Thus, they will not, for example, claim sick just in order to shirk.

Several researchers have recently proposed models of altruistic or social preferences (e.g. Ellingsen and Johannesson, 2008; Benabou and Tirole, 2006; Konow, 2010; Rauscher, 2006; Brekke and Nyborg, 2008; Brekke et al., 2003; Andreoni, 1990; Sugden, 1984). Our approach is closely related to this research. Moreover, the ideas put forward in the present paper have much in common with an interesting recent strand of literature on public service motivation (Delfgaauw and Dur, 2008; Francois, 2000, 2007; Dur and Glazer, 2008; Prendergast, 2007; Besley and Ghatak, 2005; Heyes, 2004; Frank, 2003; Handy and Katz, 1998). A typical finding in the latter literature is that while the public sector (or an employer with a specific mission) may be attractive to highly motivated employees, a high wage will also attract "the wrong types" (Delfgaauw

¹ "A substantial part of the physician's satisfaction with practice is fulfilled by serving successfully as the patient's advocate. (...) The unifying hypothesis is that physicians do have personal utility for their patients' benefit" (Eisenberg, 1986, pp. 57 and 61). See, e.g., Ma (2007), Jack (2005), Grytten and Sørensen (2001), Sørensen and Grytten (2003), De Jaegher and Jegers (2000), Chalkley and Malcolmson (1998), Farley (1986), and Woodward and Warren-Boulton (1984).

² Crewson (1997) reports, for example, that in a 1994 survey among 600 engineers, 63 percent of private sector employees and 74 percent among public sector employees rated "useful to society" as an important or very important aspect of a job; see also Lewis and Frank (2002). In a Public Agenda Foundation report presented by Yankelovich et al. (1984, as quoted in Lane, 1991), 51 percent of respondents in the US, 57 percent in Israel, and 17 percent in Britain reported to have a "strong inner need to do the very best I can regardless of pay".

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