

Kurzbeiträge / Short Articles

Commitment and the Time Span of Discretion:
A Note on the Economic Foundations
of Elliot Jaques Sociological Theory
of Wage Differentials

by
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1. Introduction

Elliot Jaques has proposed to measure responsibility of a given job by the *time span of discretion* (TSD). This, in turn, has been defined as “the longest period which can elapse in a rôle before the manager can be sure that his subordinate has not been exercising marginally sub-standard discretion continuously in balancing the pace and quality of his work. This period in effect gives the maximum time during which the manager must rely upon the discretion of his subordinate and the subordinate works of his own¹.” A number of extensive studies have shown, furthermore, that there is a very close positive association between pay and TSD giving a remarkably good statistical fit over a wide range of data². Jaques’ explanation for this finding is a sociological one: He assumes wages to conform broadly to the normative beliefs regarding equitable pay prevailing in society and argues that equitable pay is associated to TSD. Deviations of actual pay from equitable pay – and hence not conforming to TSD – will cause social tensions which hurt productivity and will thus be avoided³.

He takes, however, the equitable pay-TSD relationship as given, and one might reasonably ask whether this normative belief is determined genetically or has been learned in a social process. If innate, the theory can be accepted; if learned, we have to assume a learning process which will ultimately explain the prevailing social norms.

Social psychology, however, suggests that norms are adopted by an individual within a group because these norms are already preexistent within this

¹ JAQUES [1976], p. 109.

² The reader is referred to Fig. 14.2 (p. 230) in JAQUES [1976]. This book contains also references to many empirical studies confirming this regularity.

³ A similar position can be found in THUROW [1975], p. 104–113 for instance.

group or – even worse – norms simply adapt to actual experience via selective exposure to new information. In this way reasons supporting the status quo are selected in order to establish norms in harmony with actual experience⁴. All this amounts to the conclusion that norms of equity adapt to a given economic situation rather than vice versa.

But even if one dislikes the reductionist approach of social psychology to social phenomena and prefers, say, a functionalist approach, the functional usefulness of the pay-TSD norm remains to be demonstrated, and this brings us back, again, to economics⁵.

2. An Economic Explanation for the Pay-TSD Relationship

What seems to be necessary, therefore, is an economic theory demonstrating the competitive dominance of the pay-TSD relation which will, in turn, give rise to the existence of the equitable pay-TSD relation as a social norm.

I will try to develop an extremely simple theory in the following which might serve for this very purpose as a first step.

Starting with heroic assumptions, an economy will be postulated which is endowed with only one kind of homogeneous labour⁶. At a given instant, there

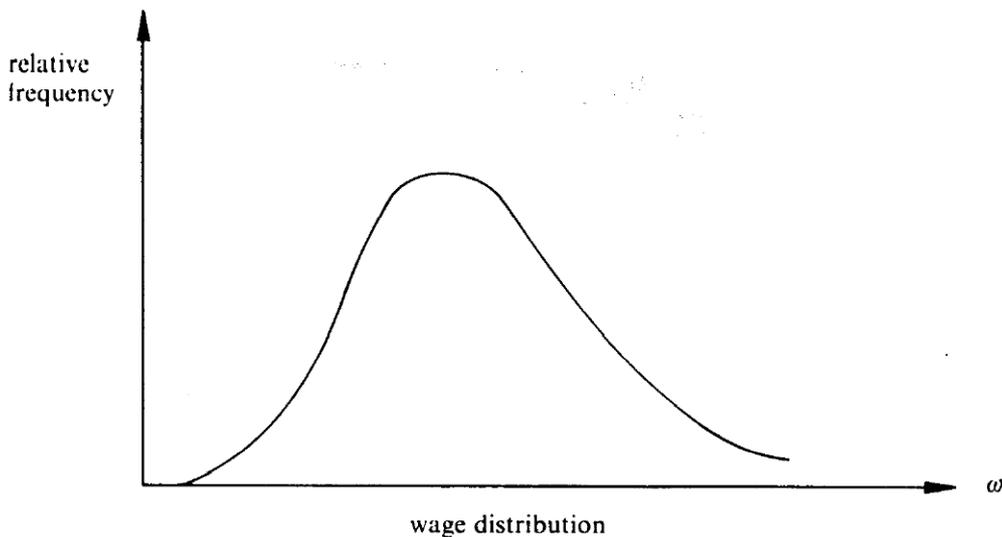


Fig. 1

⁴ This would be one possible application of Festingers famous theory of cognitive dissonance.

⁵ The function to promote social peace is obviously best fulfilled by *any* norm reconfirming the status quo. For another approach to the theory of social norms see WERTHEIMER [1935] and SCHLICHT [1979].

⁶ The following analysis is similar to the one in SCHLICHT [1978] and also closely related to Burdett's theory of job search.

is a certain wage distribution characterised by a density function $f(\omega)$ which gives the relative number of workers working at the wage ω (Fig. 1). It is assumed that different jobs are paid differently, in general, and that identical jobs are paid identically.

All workers are trying to improve their pay by getting a better (i.e. higher-paid) job. On the other hand, any worker who performs his job insufficiently will be dismissed instantaneously.

Because of dismissal, retirement, and promotion there are different job offers available. The probability of finding a better paid job, however, will be the smaller the higher the wage is which a given worker already receives. Hence the firm will know that the higher its wage offer is, the longer will the applicant expect to stay with the firm: Expected time τ of staying with the firm will be a function of the wage offer, algebraically:

$$(1) \quad \tau = \tau(\omega), \quad \tau' > 0, \quad \tau'' < 0 .$$

Consider now the time span of discretion of various jobs. It is obviously important that those workers performing jobs with a high TSD, say of several years (corresponding to the upper income bracket according to Jaques) should expect themselves to be with the firm for several years in order that there is any incentive for them to make good decisions. Consider for instance the case of a manager who has to decide about long-range issues: It is important that he will not aim at short-run profits at the expense of future performance in order to have a good time during the next couple of months or so after which he expects to leave the firm anyhow. Rather, he has to feel a strong commitment to the long run well-being of the firm⁷. This commitment will be particularly strong if he expects and desires to hold the job for a long time. In this case he will try to fulfill his duty. He will try to avoid dismissal and not to disappoint the expectations of his associates in the future⁸. This will hold true, however, if the wage attached to the job is rather high and the expectation to get an even better paid job is very small in consequence. On the other hand, if the wage paid for a certain job is rather low and the TSD is large, the worker will expect to leave the firm before his decisions can be evaluated and it might be a matter of indifference whether he would be dismissed if he remained with the firm for a sufficiently long time. There will be no incentive to perform responsibly.

In conclusion it will pay for the firm to offer wages which are positively related to TSD for pure efficiency reasons. The argument might be summarized algebraically as follows: A typical firm has n jobs. The expected efficiency of performance of job i will be dependent upon the time span of expected attachment τ_i to this job; τ_i is, in turn, a function of the wage rate according to

⁷ This issue has been discussed in a different context in v. WEIZSÄCKER and SCHLICHT [1977], pp. 59f. The commitment approach developed there provides the foundation for the present analysis.

⁸ Here it is that sociological and psychological considerations might enter.

(1). The firm produces its value-added according to a production function where the τ_i 's enter as arguments:

$$(2) \quad \varphi(\tau_1, \dots, \tau_n) .$$

If ω_i denotes the wage rate attached to job i , and if (1) is taken into account, the firm has to solve the maximization problem

$$(3) \quad \varphi(\tau(\omega_1), \tau(\omega_2), \dots, \tau(\omega_n)) - \sum_{i=1}^n \omega_i = \max_{\omega_1, \dots, \omega_n}!$$

leading to the necessary conditions⁹

$$(4) \quad \varphi_i \tau'(\omega_i) = 1 .$$

These imply wage differentials between different jobs according to the productivity of increments in the time of attachment:

$$(5) \quad \varphi_i > \varphi_j \Rightarrow \tau'(\omega_i) < \tau'(\omega_j) \Rightarrow \tau(\omega_i) > \tau(\omega_j) \Rightarrow \omega_i > \omega_j .$$

In particular, equal pay z to all jobs will not be viable if the φ_i differ for $\tau_i = z$, all i , and any positive z . The economic argument behind that is that with wage equality there will be no incentive to change the job – but dismissal will be no deterrent either preventing the workers to perform insufficiently. Hence, a certain “natural” rate of labour turnover will emerge and it will pay for the individual firm to make the jobs with high TSD more attractive in order to achieve sufficient commitment.

3. Concluding Remark

The argument has been stripped to the bones to make it as clear as possible. It could possibly be dressed up now in quite different ways for different theoretical parts and purposes. It seems to be quite important to drop the assumption of a homogeneous labour supply since the performance of different jobs provides – via on-the-job-training – workers with different capabilities; and the fact that a worker has done a certain job without dismissal provides a distinguishing quality indicator. All these features, however, will serve as additional arguments for wage differentials.

Although this might be more important than the TSD factor analyzed in this paper, no convincing theory seems to be available up to now. Nevertheless, the

⁹ If $\varphi(\cdot)$ is strictly concave, the sufficient conditions are fulfilled: The Hessian associated to (3) can be written as

$$H = \text{diag}(\tau(\omega_i))(\varphi_{ij}) \text{diag}(\tau(\omega_i)) + \text{diag}(\varphi_i \tau''(\omega_i))$$

which is negative definite if (φ_{ij}) is negative definite. Hence uniqueness is guaranteed, too.

TSD-wage relationship might be of considerable importance, as suggested by the evidence given in support to Jaques' theory. Furthermore, this note might serve to illustrate the issue between economists and sociologists on the interpretation of social laws.

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