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## *Work, leisure and a meaningful life*

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Current concern over unemployment and the creation of retraining programmes for so-called displaced workers (i.e. those whose jobs have permanently disappeared) seems to be based on the ideal that everyone should have a job, and this ideal is apparently linked to the notion that work is something essential to human nature. The Universal Declaration of Human Rights, which was signed in 1948 at the United Nations after the Second World War, states: 'Everyone has the right to work.' A cursory glance at the present situation in developed and developing countries would seem to indicate that the answer to the question 'Does a person have a right to work?' must be in the affirmative. A closer look at the problem, however, indicates a complexity that a surface glance fails to reveal.

In this contribution I do two things. I argue that the view that individuals have a right to work is in most cases based on the assumption that work is characteristic of human nature, and accordingly, if man were to be deprived of work he would cease to be truly human. According to this view a human right is such that if it were to be taken away from a person, it would violate his essence or nature. Thus, if it is in the nature of man to be free, then he has the right to be free, and if

his freedom were to be restricted, it would be a violation of his essence or nature. Similarly, most arguments for the right to work rest on the notion that work is not only peculiar to man (and therefore a specifically human characteristic), but also part of human nature. Deprivation of work infringes on the person, nature, dignity and worthiness of human beings.

I also look into the acceptability of this assumption. This I do by approaching it from three perspectives: the historico-cultural aspect, recent research on work, and work and the meaningful life.

In the historico-cultural investigation, I discuss on one hand the ideas of a few Western philosophers who developed theories about work and on the other hand the place of work in the Greek, Christian and African cultures. On the basis of these examples I argue for the thesis that the content of the concept of work and, with that, whether work is to be regarded as a part of human nature, has altered from time to time and from society to society.

Although a cursory survey of recent research on the place of work in the human situation reveals crucial gaps in the areas researched, what has been done does not provide substantial evidence in favour of a necessary link between work and being human. It does, however, highlight the complexity of the problem and the need to make distinctions between, for example, work, labour and leisure as well as to establish the interrelations.

Finally, I discuss attempts to argue for work as a necessary condition for self-respect and self-realization and thus for a meaningful life. I argue that these attempts do not succeed — activities which do not require exertion and strain and which are normally not classified as work, can foster self-respect and self-realization just as well. My general conclusion based on the three kinds of considerations, then, is that work is a special kind of activity but it need not necessarily occupy a prime position amongst human activities. The assumption basic to the so-called 'right to work' does not hold.

## **HISTORICO-CULTURAL SURVEY**

### **Hegel, Marx and Christian thinkers**

G. W. F. Hegel (1770–1831) considered work to be a specifically human phenomenon; it is practical consciousness and forms the

'mediation' between man and world. The products of man's work are his cultural creations. Individuals should be allowed to impose their will on any external object and make it their own. Hegel recognized an important point when he emphasized not so much man's ability to work, but his right to possess objects. This introduces the concept of *Besitzergreifung* ('act of seizure') (Hegel 1956:412 *et seq.*). Karl Marx (1818–1883) held the view that people begin to distinguish themselves from animals as soon as they begin to *produce* their means of subsistence, a step which is conditioned by their physical organization. It is especially the phenomenon of work (*Arbeit*) which distinguishes man from animals. Whereas animals passively adapt to nature, man on the other hand actively and consciously strives to change nature — the real human being

... is primarily a living organism consuming food, clothing, shelter, fuel and so on, and compelled to find or to produce those things (in Strauss & Cropsey 1972:756).

Marx wrote that in producing their means of subsistence people indirectly produce their actual material life. Humans express themselves through the 'mode of production' which is

... a definite form of activity of these individuals, a definite form of expressing their life, a definite *mode of life* on their part. As individuals express their life, so they are. What they are, therefore, coincides with their production, both with *what* they produce and *how* they produce. The nature of individuals thus depends on the material conditions determining their production (Marx & Engels 1973:18).

In the *Economic and philosophic manuscripts* Marx stated that man's species life has its basis in the fact

... that man (like animals) lives from inorganic nature ... To say that man *lives* from nature means that nature is his *body* with which he must remain in continuous interchange in order not to die (Marx 1971:100–101).

Clearly, for Marx human nature is an objective reality; this reality has a normative character and for man to be his true self, certain conditions should be met in the everyday world (e.g. man must not be brutalized, overworked, subjected to unnecessary toil, etc.) in order

to ensure man's dignified existence. It seems that for Marx human nature also has a physical character, that is certain physical characteristics are necessary for a creature to qualify as a human being, such as his physical ability or willingness to act, to work, to produce (Marx 1979:48).

Marx introduced the concept of alienated labour (*die entfremdete Arbeit*) as the ultimate cause of all forms of alienation, that is man is alienated from nature, himself, his species-being and fellow human beings. Briefly, alienation means that man is dehumanized, he is not what he should be. Man is not in the right relationship to (i) the objects of the world (the products and results of his labour) and (ii) his own labour activity, the last aspect resulting in self-alienation. According to Marx, this sorry state of affairs should be rectified, and this can only be done by removing the root of the problem, that is by abolishing private property in favour of communism.

It is impossible for me to enter into a detailed account of Marx's theory of labour at this point. Suffice it to say that Marx was concerned about the misery and exploitation of the individual. He gave a theory of exploitation and put forward alternatives with the view to giving every individual his rightful due. Marx believed that unemployment, or 'setting the workers at liberty' as this process was called in Marx's day, was fundamentally the consequence of the capitalist system, a result of keeping wages low, of exploiting the workers. The possibility of a future society where individuals do not need to work, where all their basic needs (and more) are met, was given some thought by Marx. He gave consideration to unemployment, as brought about by the introduction of new machinery, or the extension of old machinery. He argued:

If it employs a smaller number, the number of 'redundant workers' increases; if it employs a greater number, the general demand for labour increases only to the extent of the excess of the employed over those 'set free' ... [T]he mechanism of capitalist production takes care that the absolute increase of capital is not accompanied by a corresponding rise in the general demand for labour (Marx 1979:793).

The question 'Does a person have a right to work?' would have been answered in the affirmative by Marx if the question meant the

following: do unemployed, exploited, miserable creatures have the right to work? If the question referred to well-cared-for individuals who lived within a society where their ability to work was irrelevant for some reason or other (such as mechanization), this state of affairs would go against the socialist idea that man is essentially a productive and creative creature who by nature should work. I suspect, however, that had the question been put to Marx, given a future context where work was totally redundant, Marx would have answered that such a situation would constitute a new form of alienation, or an extension of the alienation of man's species-being.

Clearly, Hegel and, especially, Marx introduced new notions about work and man's relation to it, thus departing from the prevailing Calvinistic attitude of the 'inner-world asceticism', which roughly implied that Christians should not try to escape participating in everyday events (as the monks of the Middle Ages tried to do), but that they should become involved with the knowledge that the spiritual part of man's life is more important than the material. Thus Calvinism introduced a model whereby Christians participated in everyday affairs with divided loyalty, involved in matters of the day but in a sense already belonging to the coming kingdom of God. John Calvin (1509–1564) explained the biblical notion of property in the following way: the believer should use and enjoy his possessions, always remembering that he is responsible to God for everything that he does. He will also be judged by God for his actions (Calvijn 1956:224). At the moment of creation man was given the task of cultivating the Garden of Eden. Work was an essential aspect of created human nature. Sin, however, added the element of toil to work. Thus man needed to work (he is in the world) but there were other things (not of this world) which were of higher value (cf. the influence of Platonic-Aristotelian views on higher and lower forms of labour). The important underlying thesis was that work (i.e. labour) was unavoidable and should be seen as an opportunity to serve fellow humans, but even more important was the fact that man's spiritual needs should be satisfied. This work ethic also incorporated the commandment of the Mosaic law which emphasizes the toilsome character of work; for six days man should work, the seventh day is the day of rest, the day of joy, the day that is blessed. The Old Testament Jew regarded work as toilsome and wearisome, his real joy lying in his possessions, his blessedness in wealth and rest. The wisdom literature of the Old

Testament, for example Proverbs, does, however, emphasize the fact that experience proves that the industrious man has an advantage over the sluggard; the diligent person is more prosperous than the lazy one.

Martin Luther (1483–1546) held the view that the apostle Paul explicitly commanded Christians to do physical work in order to enable them to obtain the goods which they needed to assist their fellow men, the poor in particular. For Luther work was part of Christian nature or, to put it differently, the work Christians do has a different character, a *Christian* character. In Luther's works there is hardly any reflection on the nature of work as such, possessions and the use to which they can be put being the important factors under consideration (Luther 1959:58).

The notion that work or labour ennobles was especially prominent during the *Aufklärung* (Enlightenment). Thomas Carlyle wrote:

Not 'I can't eat!' but 'I can't work!' that was the burden of all wise complaining among men. It is, after all, the one unhappiness of a man, that he cannot work; that he cannot get his destiny as a man fulfilled ... the night cometh, wherein no man can work ... our work, behold, it remains ... (in Trevelyan 1953:74).

Thomas Aquinas (1225–1275) held the view that human nature is constituted by a unique set of properties and that these can be understood and defined. Man has an intelligent nature and it is part of his nature to provide for himself and others.

### The Greek notion of work

If we go further back in history we find that in the time of Aristotle (384–322 BC) the Greek work ethic had reached the stage where the aim of work was to acquire possessions, since possessions bring enjoyment. Lower work was for slaves so that 'those who have it in their power to be free from these low attentions, employ a steward for this business, and apply themselves either to public affairs or philosophy' (Aristotle 1947:12). Aristotle made the interesting distinction between certain people who are 'slaves by nature' (i.e. it is in the nature of these people to do certain *toilsome* duties), and free men who have 'different' natures:

... for it is the intention of nature to make the bodies of slaves and free men different from each other, that the one should be robust for their necessary purposes, the others erect, useless indeed for what slaves are employed in, but fit for civil life, which is divided into the duties of war and peace; though these rules do not always take place, for slaves have sometimes the bodies of free men, sometimes the souls ... (Aristotle 1947:9).

The notion of work being characteristic of aristocratic human nature was clearly stated by the Greek poet Pindar (born 518 BC) who wrote about man's 'powers of nature; for might of limb maketh itself manifest by action, and might of mind by counsel, for those who are attended by the inborn skill of foreseeing the future' (Sandys 1961:1.26). Pindar differentiated between the workings of the body and the workings of the mind. The skills of the hand and the skills of the mind are two inborn powers of nature, the one being a physical power and the other a mental power. Action is opposed to thought, and similarly there is a difference between work and counsel. Pindar distinguished between work which was of higher value — work of battle, the toil of the athlete, deeds or prowess, great exploits, various skills and crafts — and lower work, which was that of the hireling, the manual labour done by the slave.

Homer ( $\pm$  800 BC) distinguished between various types of work — work in battle, the toil of the swineherd, the burning of a city that causes toil and woe for the inhabitants, the toil of building a wall — and the tasks of women (the loom and the distaff). Work that was more pleasant included the following: the work of the masters of public craft (prophets, healers, builders, minstrels, poets, heralds), works of beauty, and works of marriage. Again, as in Pindar, there is strong emphasis on the joy of possessions, prosperity, feasts and being wealthy. Both Homer and Pindar drew a distinction between skills of the mind and physical skills; it seems that, by the time Pindar wrote, the need to work was regarded as essential to human nature, an innate characteristic, independent of human decisions and enactments.

### **African cultures**

If we examine African tribal cultures we find that there was no work ethic in the Western sense of the word. Everyday work, be it the build-

ing of a hut or the weaving of a basket, was not given separate value or meaning. In most African cultures, for example the Bhaca society, there was sexual division of labour: a man seen hoeing would be ridiculed and men would be indignant if women joined in the hunt. Cattle-raiding from neighbouring farms was a common and honourable pastime, an accepted way of adding to one's possessions. Work (communal land tenure, cultivation of fields, etc.) was done 'because grain is necessary for food, and because beer made from it is very much desired' (Hunter 1961:92). Clearly, the attitude in African cultures towards work was that, if circumstances allowed, there were more pleasant things to do. The absence of a 'philosophical' reflection on work is counter-balanced by the high value placed on certain possessions (e.g. cattle, women, children, etc.). Man is thus depicted in African culture as a collector, an accumulator of things, one who has the need to possess certain objects and enjoy these possessions. If these needs are fulfilled, the need to work disappears; there is no compelling *natural* need to work.

Investigation shows that most societies do not query the rights of their members or groups to exercise their rights of property. There is seldom or ever dispute over the right of property; the right to accumulate, collect and possess property either privately (capitalism) or collectively (socialism) is not questioned. In most societies the right of property seems to be an accepted one. Individuals or groups may claim property, for example A claims what he has worked for or obtained by other means, and B, who accepts A's right to property, expects A to acknowledge in turn his (B's) right to property. However, there is a difference of opinion on a number of issues as far as work itself is concerned.

### **Summary**

There are groups and individuals who are quite happy not to work as long as someone takes care of their needs, though they are likely to protest if they are not allowed possessions! If a society were to disallow individuals or groups the right to property, this would merely mean that the members of that society would be propertyless. In the present context, work is usually linked with a job, being paid for what you do, earning a livelihood. The 'right to a job' is a new claim, generated by a new set of circumstances in which many of the traditional

forms of work have become superfluous. To my mind the claim of 'a right to a job' seems to rest on the assumption that man has 'a (natural) right to work'. It is quite conceivable that a future society might develop, one in which work in the traditional sense of the word would have disappeared completely; the absence of work in such a society would in no way violate man's personhood or humanness. At most he would be a person 'who is free from work'. In a socialist society, however, to work is a requirement and an obligation, the individual may not choose not to make his contribution to the overall goal of the economy. The socialist believes that man needs to work not only for the products of work, but also to fulfil his being.

The examples above have shown that the content of the concept of work, such as the characteristics of work, the items listed under work and whether work is to be regarded as part of human nature, has altered from time to time and from society to society. Individuals or society may accept certain rights and act accordingly, exercising those rights, committing themselves and others to mutual obligations; or conversely these rights may be suspended or disappear altogether.

Marx, in his time, would have endorsed the thesis that man has the right to work. But such a claim in the Marx era is different from the contemporary claim of thousands of jobless people who demand that they have the right to work; this is so because a different set of circumstances exists today.

## RECENT RESEARCH ON THE NOTION OF WORK

Although many researchers still believe that the solution to unemployment lies in re-establishing full work opportunities for everyone by pure economic means (cf. T. Kuipers *et al.* 1988/89 for a debate on this issue), the premise that unemployment is here to stay is gradually gaining widespread acceptance.

Much research has recently been done on leisure activities as such, but on the other hand

... one of the most widespread organizational policies that would seem to have direct implications for work and nonwork concerns has been virtually ignored as a research topic — a vacation from work (Lounsbury & Hoopes 1986:392).

This view is endorsed by Garnett Stokes Shaffer:

The role of leisure activities in determining work and non-work satisfaction is unclear ... Just as job satisfaction literature makes clear that work satisfaction is multivariate and complex, it is also probable that nonwork satisfaction is multifaceted (Schaffer 1987:116).

Although research is being done in certain areas concerning work–non-work linkages, and the effect of experiences in leisure or family spheres on experiences in the domain of work, and vice versa, virtually no research has been done on the attitude of people to the possibility that a stage may be reached in future where people will not be called on to work at all. As 'most research demonstrates only a weak empirical relation between work and nonwork satisfaction' (*ibid.*:115), it is improbable that empirical research will be helpful in describing, analysing and evaluating a possible future situation where the absence of work is prevalent.

The contemporary scene reflects a changed attitude to the nature of jobs. It is claimed that the micro-electronic revolution heralds the abolition of all work, that there can no longer be full-time waged work for all, and waged work cannot remain the central activity in our lives (cf. André Gorz 1985). Handy (1984:5) says:

Muscle jobs are disappearing, finger and brain jobs are growing, or, to put it more formally, labour-based industries have been displaced by skill-based industries, and these in turn will have to be replaced by knowledge-based industries.

In the developed countries jobs are becoming fewer and further between and shorter working weeks are being introduced. Charles Handy distinguishes between various forms of work: (i) job work, which is paid, full-time self-employment, (ii) marginal work or work 'on the side' for extra earnings, and (iii) gift work we do for free (*ibid.*:52).

A redefinition of work is well illustrated in the following example:

Consider these facts. Fewer than 20 million people out of Britain's 56 million have full-time jobs. A further 13 million are adults of working age, of whom 4 million might describe themselves as not working and wanting jobs. The other 9 million may do part-time work (4 million do); they may do voluntary work (18 million





value, a secure conviction of his conception of the good, and a sense that his goals in life are worth carrying out. It is argued that although there are individuals who are for some reason or other deprived of work (for health reasons, because of physical handicaps, etc.), on the whole, meaningful work enhances the quality of life and confers self-respect. Although meaningful work may not be indispensable to an individual's self-respect, it may be argued that it goes a long way towards fostering and strengthening self-respect. Jenkins and Sherman have noted that although most people work because they need work, many do not like their work. They conclude:

We do not believe that work *per se* is necessary to human survival or self-esteem. The fact that it appears to be so is a function of two centuries of propaganda and an educational system which maintained the 'idea' of work as its main objective, but which singularly failed to teach about leisure and how to use it ... People at present accept that they will be bored if out of work ... This need for work is, we would argue, an ingrained and inculcated attitude of mind. Children have learned from their parents that work is essential, and their parents from their parents, and within the family circle, let alone outside, work has taken on the attributes of a shibboleth (Jenkins & Sherman 1979:41).

Weaver's study of job satisfaction as a component of happiness, involving 1 500 respondents, clearly showed that job satisfaction is only part of the satisfaction-happiness relationship:

Thus, happiness seems to be a generalized phenomenon, according to which employees are either generally satisfied or generally dissatisfied across a broad totality of life, with relatively few employees experiencing a significant satisfaction-happiness relationship in only one of a few aspects of life ... The happiness of most employees would rarely come entirely from a satisfying job, with little or no support from satisfaction in other domains of life (Weaver 1978:839).

To what extent is *work* an indispensable ingredient of meaningfulness in life? Almost all the researchers working in this area accept the fact that work is *by definition* an indispensable item. The following quotation is typical of the view that work is essential for a meaningful life:

Work, in some form, is critical to individuals. It is, apart from anything else, a principal structure for mattering. We all need to feel that we matter, that we can contribute, that we are missed in our absence, that we are respected and liked (Handy 1984:55).

In contemporary society work is regarded as a way of life, a social necessity which to a great extent contributes to self-fulfilment. In most industrialized societies work has a very definite social status, and being able to identify with one's work contributes to a sense of personal identity, self-esteem and creativity.

Although the above notion of work has become entrenched in most societies, there is no reason whatsoever why work need be essential or critical to individuals. In a future society where work has become redundant people could be educated to accept the fact that if work is removed from the list of meaningful activities in life, they might still find meaning and fulfilment in a host of other activities. Although a case could be made for retaining work because it is one of those activities, and an important one, that contributes to self-respect and self-realization, this does not alter the fact that within a given community, other types of activities such as sport, play, music and reading, which are done without exertion or strain, could supply sufficient self-respect and self-realization. Meaningful work need not be the principal basis of self-respect in people's lives.

## **CONCLUSION**

Work is a special kind of activity, but need not necessarily occupy a prime position amongst other human activities. It seems that the question 'Is there a right to work?' depends on the position that this specific type of activity occupies on the value-scale of human activities which a certain community adheres to at a particular point in time. If work or labour activities happen to be at the bottom of the scale of values, the claim to a right to work will be rejected, and other types of activities with a higher standing will be more desirable. The right to work depends on the attitude of a specific society. I think that in future societies where work has become redundant the general claim to a right to work will be rejected, whereas the claim to a right to property or the right to an acceptable standard of living may continue to be accepted. I also suspect that in future societies what counts as work will also change, as it has through the ages.

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## *Life and society at Ancient Memphis according to the Saqqâra texts*

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Our colleague and friend, Mike Macnamara, being a philosopher, a poet, and a man with general interests in the history of mankind, will hopefully accept this contribution on life and society at Ancient Memphis as revealed by the Aramaic texts from North Saqqâra as a token of appreciation and gratitude for his contribution toward the dissemination of knowledge at the University of South Africa.

### **DISCOVERY AND DATING**

Aramaic texts together with Demotic and Greek papyri were discovered during 1966 and 1967 and from 1971 to 1973 at North Saqqâra in Egypt (see Emery 1967:143–144 and Segal 1983a:23). The 202 fragmentary Aramaic papyri together with Aramaic and Phoenician ostraca were published in 1983 by Segal (Segal 1983b). Since the texts were not discovered within an archaeological context, one must rely on other criteria for dating the Aramaic texts. One text (27:4) mentions 'the fifth year of Darius', and another one (31:2) refers to 'the ninth year of Darius'. This 'Darius' is the same person as the 'Darius' who is mentioned in several papyri from Elephantine, e.g. the well-known petition of the Jews at Elephantine to the governor of Judaea concerning the rebuilding of the Jewish temple at Elephantine (Cowley

30), and the famous Passover letter instructing the Elephantine Jews to keep the Passover in accordance with the community in Jerusalem (Cowley 21, and see Porten 1979:91–92), i.e. Darius II (423–404 BC). Text 30a:1 mentions 'the thirty-first year', and Text 32:1 refers to 'the thirty-seventh year' and 'the thirty-eighth year', which can refer to either the reign of Artaxerxes I, i.e. 465–424 BC, or the reign of Artaxerxes II, i.e. 404–358 BC. The reign of Artaxerxes I may be preferable, since after 404 BC the Elephantine papyri are dated according to the reign of Amyrtaeus, e.g. Cowley 35. Text 34a:3 refers to 'the days of Cambyses' thereby indicating something that happened in the distant past, with which Cowley 30:13 may be compared: '... and when Cambyses came into Egypt he found that temple built ...' On the basis of these date formulae we may date most of the texts from North Saqqâra to the same period as the other Aramaic documents from Egypt, i.e. the Elephantine papyri (Cowley 1923 and Kraeling 1953), the Driver documents (Driver 1954), and the Hermopolis letters (Bresciani & Kamil 1966). A dating in the Persian period, roughly between 500 and 404 BC, is also confirmed by the palaeography and linguistic features of the Saqqâra texts (see Segal 1983b:3–4).

Since most of the Saqqâra North texts probably originated at Memphis, they throw an interesting light on life and society in this city, called *Mnpy* (with nasalization) in 24:7, 30a:1, and *Mpy* in 63:5, 136:2, cf. Hebrew *Moph* (Hos. 9:6) and *Noph* (Isa. 19:13, Jer. 2:16).

## COMPOSITION OF THE SOCIETY

About 46% of the personal names attested in the Saqqâra texts are Egyptian, 12% Persian, and the remainder Semitic. Some of the Semitic names are pure Babylonian, for example *Manukki* ('Who is like ...'), *Iddinamarduk* ('Marduk gave'), *Iddinabel* ('Bel gave'). Other personal names are composed of the name of a Babylonian god and a West Semitic verbal form, for example *Nabunathan* ('Nabu gave', 77b:1), *Nabushezib* ('Nabu saved', 30a:1, 30b:1), *Nabu'al* ('Nabu entered', 47:5), and *Sinbanit* ('Sin, you created', 28a:2). Still other personal names are composed of a West Semitic deity and a West Semitic verbal form, for example *Bethelshezib* ('Bethel saved', 9:7, 47:6), *Bethelnuri* ('Bethel is my light', 53:20), and *Betheltequm* ('Bethel, you will rise', 47:7). Only two Jewish names, *Yehoram* ('The Lord is lofty', 47:8; see Fowler 1988:80 for a discussion of this name in Biblical

Hebrew) and *Yehomodi* ('The Lord is my confessor', 54:4) are found in the Saqqâra texts. This is strange since we know from Jeremiah 44:1 that there was a large Jewish community at Memphis. Must we assume that this community had disappeared or had been assimilated by the time the Saqqâra texts were written? However, the texts reveal that the society at Memphis was of a cosmopolitan nature, albeit predominantly Egyptian. At a specific moment at Elephantine, 445–420 BC, the percentage ratio of personal names was as follows: Egyptian 12.7%, Persian 10.3%, and Semitic 77% (Silverman 1985:85–86). The society at Elephantine was, in contrast to that of Memphis, predominantly Semitic. This was probably due to the fact that Elephantine was a far-away military outpost. Silverman (1969:709) has shown that at Elephantine there was a growing process of Aramaization of the Jews to the predominantly Aramaic environment. This may be illustrated from Cowley 18:5, where a father has a good Jewish name, viz. *Yehonathan* ('The Lord gave'), but the son an Aramaic name, viz. *Bethelnathan* ('Bethel gave'). At Memphis, so it seems, there was an assimilation process of the Semites to the Egyptian environment, which may be illustrated by two cases where the fathers have Semitic names, but the sons Egyptian ones: 'Petetwere (Egyptian *P'-d'-t'-wry*) the son of Nabu'al' (47:5), and 'Shamaw the son of Sinbanit' (For *šamaw* being an Egyptian name, see Kornfeld 1978:94, Grelot 1972:492, and Ranke 1935:387, 13).

The presence of Greeks, viz. Ionians and Carians, involved in shipping is attested by Text 26. The 'Carians' are also mentioned in a text from Elephantine where they are called 'the boatholders of the Carians' (*nwpty' zy krky*', Cowley 26:1 and 8); unfortunately Cowley misunderstood the word *krky*' (see Porten & Yardeni 1986:99). These Carians and Ionians were probably mercenaries, and the receiver of Text 26 is instructed to seize them so that they should not flee. He is ordered to put six chains on them, to appoint police to guard them 'between the gates', and they must not receive 'clothing and food'. 'Between the gates' is then qualified as 'between the gates of the sea', that is the Nile; cf. also Nahum 3:8 and Isaiah 19:5 where the Nile is called *hayyam*, 'the sea'.

## RELIGIOUS LIFE AT MEMPHIS

The Saqqâra texts reveal a highly polytheistic situation at Memphis. We encounter the well-known Egyptian goddess 'Isis the Great'

(*'syt<sup>c</sup>* = Egyptian *Is.t-t<sup>c</sup>.t*, Text 56), and the lesser-known 'Sati the goddess' (*sty 'lht []*, 181:3). She was the goddess of the First Cataract, and consort of Khnum (see Morenz 1973:268), an Egyptian god who had his priests (*kmry' zy hnwb*) at Elephantine according to Cowley 27:3 and 30:5. It is interesting to note that Sati was worshipped in the very vicinity of the Jewish colony at Elephantine, and it is to be expected that she should be mentioned in the texts. According to Cowley 14:5, a Jewish lady by the name of Mibtachiah ('The Lord is my refuge'), known from several Elephantine texts, 'took an oath by the goddess Sati'. One of the Saqqâra texts (no. 56:1) also mentions 'the priest (*kmr*) of Isis the Great'. Other texts refer to the Babylonian gods *Bel* (*bl 'lhh*, 'Bel his god', 23b:5), and *Nabu* (*nbw 'lhh*, 'Nabu his god', 30:7).

The theophoric personal names, that is names of which one element is a divine name, show that the following gods were honoured by those who wrote the texts: the Egyptian gods Ptah and Osiris, the Babylonian gods Nabu, Marduk, Sin, and the goddess Nanay (known from the Ur III period, ca 2000 BC, already), the West Semitic gods El, Bethel, and the goddess Atteh. In the light of the Saqqâra texts and the Hermopolis letters, which mention a temple of Bethel (Hermopolis 4:7), the existence of Bethel as an independent Aramaic deity cannot be denied (see Porten 1969:118–119), and it is possible that Genesis 31:13, 'I am the God Bethel', also refers to this deity. Atteh represents the Aramaic form of the Canaanite goddess Anath, well-known from the Ugaritic texts. In Texts 35:1 and 88:2 we find the personal name *'šmrm*, 'Eshem is lofty', a name which also appears at Elephantine (see Kraeling 8:11; 11:12). Since the element *'šm* also occurs in other personal names from Elephantine, e.g. *'šmšzb* ('Eshem saved') and *'šmn* ('Little Eshem'), as well as in the composite divine name *'šmbyt'l*, 'Eshembethel', it was accepted that *'šm* is a West Semitic deity. In his study on the Israelite personal names, Martin Noth proposes a connection with the Phoenician 'Ishmun', a god of healing, known from the inscriptions of Ishmun'azar and Baalshilleim, or with the word *šm*, 'name' (Noth 1928:124–125). Silverman (1985:227) suggests that 'Eshem could be connected either with *šm*, 'name', or with *'šm*, guilt-offering', although he prefers the latter. He further remarks: 'The Jews may have connected via folk etymology the two similarly sounding words *'šm*, 'name', *'šm*, 'guilt-offering' (Silverman 1985:227). With the name 'Eshemram' ('Eshem is lofty')

one may compare the personal name *šumu-ramu*, 'the name is lofty', which is attested in Ugaritic (Gröndahl 1967:44). 'Eshem' (*šm*) should be regarded as the Aramaic form of the word *šm* or *šumu*, 'name', and in the light of the Ugaritic evidence it is possible that the name *šmrm* ('Eshemram') means 'the name (of the child) is/will be lofty'. The existence of an independent West Semitic god 'Eshem' is still a matter for further discussion.

## ECONOMIC LIFE

Seven of the Saqqâra texts deal with taxation. Text 19 refers to 'the tax' (*mks*) to be paid in money, but probably also in 'red barley' (*t šry* = Egyptian *it dšr*), used for beer-making. The word *mks* also appears in Cowley 81:112, a text which is much later than the other Elephantine papyri. Another word for 'tax' or 'tribute', viz. *mndh*, is encountered in Text 24:11 where reference is made to 'the tax of the garrison'. *Mndh* is also found in Kraeling 5:7, Driver 10:3, 4; 11:2, 3, 5, and in Biblical Aramaic (Ezra 4:13; 7:24). In Kraeling 5:7 it means 'payment' (*wlmzlkj mndt ksp*, 'and to sell you for a payment of silver'), that is it has the same meaning as the neo-Babylonian word *mandattu*, 'payment', of which it is a direct borrowing. In the Driver texts *mndh* means 'rent', due from the royal domains in Egypt to the Persian overlord (Driver 1954:31). It is interesting to note that 'the garrison' or *hayla* had to pay the 'tax' or 'tribute'. The *hayla*, also mentioned in Text 17:6, is well-known from Elephantine, where it includes the soldiers and their families (see Porten 1968:29 and Grelot 1972:46). It is not clear whether at Memphis the *hayla* was a military unit or whether it was a colony of agriculturists cultivating royal estates, in exchange for which they had to pay the 'tribute'.

Several texts deal with other economic matters. References are made to the monetary units hallur, sheqel and karash. At Elephantine the system of exchange was composed of four units: hallur, zuz, sheqel, and karash. These monetary units circulated in the form of silver weighed out on the balance (Cowley 15:23–24, Kraeling 7:26) according to the 'stones of the king' (*bny mlk*, Cowley 15:5) or, in one instance, 'the stones of Ptah' (Cowley 11:2). The hallur was the smallest denomination and was the equivalent of 1/40 of the sheqel, while 10 sheqels or 'the tenner' (*šrt*, Cowley 6:15; 8:14, 21) were equivalent to the Persian karash (Porten 1968:66). Text 42b:1 refers to *ḥ 2 šmšm*,

'2 hopen sesame'. At Elephantine the *hopen* or 'handful' was both a popular and an official measure of capacity (Porten 1968:71). It appears in Driver 6:3 as a measure of white flour and wine or beer, and in the marriage contracts from Elephantine as a measure of castor oil, for example Cowley 15:15, Kraeling 2:5-6; 7:20-21. According to Kraeling 2, the newly wedded lady Tamut brought with her into her husband's home several articles, amongst them *plg hpn'tqm*, 'half a handful of castor oil' (for *tqm* see Dupont-Sommer 1964:71).

Text 35 states that Nanayshezib, 'an Aramean', made a loan in money of 6 sheqels in the presence of Eshemram, and that 'it will produce interest (*yrbh*) 2 for 100', that is an interest rate of 2%. Several loan contracts, for example Cowley 10 and 11, indicate that an interest rate of 12% was sometimes demanded at Elephantine. Cowley 10 states that Ya'uhan, the daughter of Meshullak, borrowed money from Zakkur, 'the Jew of Yeb' (Elephantine), and Ya'uhan, on her part, made the following commitment: 'You have given to me as a loan the sum of 4 sheqels ... which shall be due from me at the rate of 2 hallurin per sheqel per month, being at the rate of 8 hallurin for each month; if the interest is added to the capital, it shall produce interest (*yrbh mrbyt'*) like the capital ...' Should the borrower fail to pay the interest and the loan by the end of the second year, Zakkur could take hold of the borrower's possessions.

## SLAVES

A number of the texts from Saqqâra deal with slaves, both male and female (nos 4, 5, 8, 9, 10a, etc.). According to Text 4:1 the value of certain slaves was estimated at 15 karashin in money. Texts 4 and 5 deal with the manumission of slaves. In 4:5 we read: 'I am manumitting, but there are slaves that I have not released,' and in 5:6 we find: 'I shall release the two of them.' The reasons for releasing the slaves are not given, but it may be for humanitarian reasons. The verbs used here for 'to manumit' and 'to release', viz. *ntr* and *šdn*, do not occur in Egyptian Aramaic, where the verb *šbq* is found. The verb *ntr* can be connected with *ntr*, 'to set free', in Job 6:9 (see Koehler & Baumgartner 1983: s.v. *ntr* I), and the same verb in Cowley 15:35 where it has the meaning 'to remove'. The verb *šdn* is of Phoenician origin, and should be connected with the expression '*iš šdn*' appearing in Punic inscriptions with the possible meaning of 'a free man' (see Jean &

Hoftijzer 1965:s.v. *šdn*). The practice of manumission was also known at Elephantine. Kraeling 5 deals with the manumission of the lady Tamut and her daughter, Yehoyishma, by their master, Meshullam. The master made the following statement: 'I have taken thought for you in my lifetime; free have I released you at my death, and I have released Yehoyishma by name, your daughter, whom you did bear to me; son of mine or daughter, or brother of mine or sister, close or distant ... shall not have power over you and Yehoyishma, your daughter, whom you did bear to me. Nobody shall have power over you to mark you and to sell you for payment of silver. Whoever shall rise up against you and against Yehoyishma, your daughter, whom you did bear to me, shall give to you a fine of silver, 50 karash by royal weight, and you are freed from the shadow to the sun, as well as Yehoyishma, your daughter, and another man shall not have power over you and Yehoyishma, your daughter, but you are freed to the god.' Hereupon Tamut and Yehoyishma replied: 'We will serve thee as a son or daughter provides for his father in your lifetime and unto your death (and after your death), we will provide for Zakkur as the son provides for his father, just as we were serving you during your lifetime. We, if we rise up saying, "we will not provide for you as a son provides for his father, or for Zakkur, your son, after your death", we are liable to you and to Zakkur, your son, for a fine of silver 50 karash by royal weight ...' The following interesting points emerge:

- (i) Tamut and Yehoyishma are released but have to provide for Meshullam and his son, Zakkur, as long as they live, and should they refuse to do so they are liable to a fine of 50 karash.
- (ii) The expression 'from shadow to sun' (Yaron 1961:39-40) indicates that Tamut and her daughter enjoy inviolability of person, that is they cannot be marked as slaves nor sold again.
- (iii) 'Freed to the god' either indicates that the act of manumission took place in the temple of Yahu at Elephantine (so Porten 1968:220) or it may refer to a practice found in the Greek laws of manumission according to which a fictitious sale to the gods did take place (so Falk 1954:116). In Babylonian manumission documents there are also indications that the act of manumission took place 'before' or 'for' the sun-god Shamash, the god of justice (see Driver & Miles 1956:230).
- (iv) In the light of the Babylonian manumissions, the procedure followed, although not spelled out, was that of adoption, i.e. both

Tamut and Yehoyishma became the 'daughters' of Meshullam and thus the legal sisters of Zakkur, his son (Porten 1968:221, and see Driver & Miles 1956:228–229 for Babylonian examples).

Some of the Saqqâra texts refer to the marking of slaves. In 5:8 we read that a slave 'is inscribed with the mark Eta'. The word for 'mark', viz. *šnyt*, is probably to be connected with Babylonian *šintu*, 'sign of ownership'. It is interesting to note that the Greek letter *Eta* is employed as the owner's mark. Text 8:3 mentions a slave-girl who 'is inscribed with my name'. In both texts the verb *štr* is used, and the same verb appears in Driver 7:7 for the marking of slaves. According to neo-Babylonian texts, privately owned slaves had the name of their owner branded on their hand, while temple slaves were branded with symbols of the deity (see Oppenheim 1944:15). The practice of marking slaves is also confirmed by the Elephantine texts. In Kraeling 5:3 we read: '... his slave-girl on whose right hand is a mark, thus, "Belonging to Meshullam",' and in Cowley 28:4–5 we find: 'A Yod is engraved on his right hand with a mark in Aramaic, thus, "Belonging to Mibtachiah".' In the light of Saqqâra 5:8 it is now clear that the *Yod* is a mark indicating ownership. The marking of a slave may also be reflected in Isaiah 44:5: 'And another one will write on his hand, "Belonging to the Lord".'

The expression 'the son of the house' (*br byt*) occurs with three names in Text 53. It is also found in Kraeling 10:19, and may indicate a son born from a union between a master and a slave-girl. With this we may compare Ecclesiastes 2:7: '... I have sons born from slave-girls' (*bny byt*).

## CONCLUSION

The Saqqâra texts reveal a cosmopolitan society at Memphis during the Persian period, comprising Egyptians, Persians, Babylonians, Arameans, Jews, and even Greeks. The texts also give evidence of different and divergent religious and cultural elements in the society. Through assimilation these different ethnic, religious and cultural strata developed into a symbiosis which formed the basis of the peculiar form of Hellenism later to develop in Egypt. In legal matters the texts reveal a dependency on the Babylonian legal tradition.

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## *Presuppositions in science*

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Presuppositions may be a problem for science, as well as in ordinary life. Things can go wrong because of certain unacknowledged assumptions which we have. The idea that objects move only as long as they are pushed or pulled directed mechanics for a long time, until Galileo thought of another possibility. We know of many other cases in the history of science where assumptions that were so natural that they were not discussed and often did not become explicit, guided inquiry: that the stars are relatively near to earth; that light has to consist of either particles or waves, but not both; that energy decreases or increases in a continuous manner; that there is radio-silence in intergalactic space. We also know of presuppositions in ordinary life, such as expecting shopkeepers to be willing to sell goods, and sidewalks to be solid. Some puzzles in particular bring out certain tacit assumptions, for example the problem of connecting nine dots that are arranged in a square, by means of no more than four straight lines without lifting one's pen from the paper.

The question addressed in this paper is: What can we do about presuppositions? I shall consider several solutions that have been tried, and argue for the necessity of a multi-faceted approach to inquiry. This will also provide basic support for Macnamara's special interdisciplinary investigations, as discussed below.

Usually, we become aware of a presupposition when something goes wrong, when it prevents us from solving a problem for example, or disrupts communication. It has happened that a tutor explained at great length to a student the logical and philosophical problems involved in talking of non-existent objects, using the concept 'unicorn' as a paradigmatic instance, only to find that the student, having no idea what 'unicorn' means, totally failed to make the necessary connections. The tutor wrongly presupposed the student to possess a piece of non-academic cultural knowledge. A little thought beforehand in this particular case have prevented the communication breakdown, but clearly one cannot always have such foresight.

Presuppositions are what we take for granted or assume to be necessary conditions. They form a body of knowledge and assumptions present before we enter into a context: presuppositions have their place outside the narrow situation with which one is actively concerned, and they are for the most part implicit and lie outside one's awareness. So how can we handle such tacit assumptions: can we avoid them or, if that is not possible, find a way to detect them in order to make them harmless? In science, the detection of a special presupposition may mean an important breakthrough, as in the historical examples mentioned above. It would certainly help if we could locate the most glaringly wrong assumptions, those that prevent science from developing in useful ways.

I shall now discuss (i) the formal role of presuppositions in inquiry, and whether we could set them aside by mechanical means. (ii) It can be shown that it is logically impossible to avoid presuppositions altogether. (iii) Attempts to make all presuppositions explicit are also doomed to failure. (iv) Thus we are faced with the inevitability of presuppositions in all inquiry. This conclusion has led to various reactions. Some thinkers have accepted a thoroughgoing relativity, where 'anything goes'. Others have concluded that one may freely choose one's approach, with its own built-in assumptions; and still others cling to a rational basis, salvaging objectivity as far as possible. If we opt for the latter approach, how should we proceed?

Because presuppositions do not form part of the immediate situation, we cannot apply a simple formal logical treatment to them. For suppose that any statement about Louis presupposes that he exists. Then

we can formalise ‘“Louis is happy” implies “Louis exists”’ as

$$H \supset L$$

But we also have to accept that ‘“Louis is not happy” implies “Louis exists”’

$$\sim H \supset L$$

and the unfortunate consequence of joining these two formulas is that Louis exists necessarily, since either  $H$  or  $\sim H$  must be true. (It is either true or false that Louis is happy.) So if presuppositions are formally expressed as above, it turns out that all presuppositions must be true. Naturally this is not the case. Our mistake was to treat the presupposition as part of a restricted situation, whereas its correct function lies outside. In axiomatic systems, the presuppositions that one is using two-valued logic, and that there is at least one individual in the universe of discourse, do not form part of the system itself, although they can be specified separately. But even formally, presuppositions can neither be fully spelled out, nor avoided. If Frege could have made clear to himself beforehand that he assumed that sets can be members of themselves, he might not have been caught unawares by Russell's discovery that the Fregean system of *Grundgesetze der Arithmetik* was inconsistent. Frege (1964:127) mourns:

Hardly anything more unwelcome can befall a scientific writer than that one of the foundations of his edifice be shaken after the work is finished ... It is not just a matter of my particular method of laying the foundations, but of whether a logical foundation for arithmetic is possible at all.

In the case of an axiomatic system, the presuppositions form part of the context of the system. True, it is possible to formalize this context in turn, but this can only be done by stepping outside the axiomatized system itself; even if we should repeat the process, obtaining a hierarchy of formal meta-languages, it would still be impossible to eliminate the final non-formal embedding context altogether (Blanché 1962:63–64). The formal context itself, therefore, offers no solution. The embedding context is that of human communication. Now any communication requires common ground between the participants, and this requirement itself is a further presupposition. Moreover, we cannot spell out exactly what this ‘common ground’ consists of, since

it is itself vague and shifting. We only become aware that such a common ground is required when it falls short in some respect, as in the example of the unicorn related above, or as in the case of a student who interprets 'If A then B' in the sense of 'A as well as B'.

Should we, then, rather try to avoid presuppositions? It is not possible to be a completely neutral observer, a mere recorder of facts and events, which would be what a presuppositionless science requires. Kant (1978:63) tells us that 'the sensuous faculty cannot think': we do not accept information through our senses passively, but must actively make it into our own, which means that we inevitably add our own presuppositions to any observation. Husserl insists that the world is not just out there on its own, but that it exists to the extent that we can experience it, and that what we experience, is what we call the world. (See e.g. Husserl 1969:154–161.) He is not talking about a single consciousness, however, but rather of the consciousness of human beings in general. According to Husserl, scientific knowledge, and in fact all knowledge, rests on our everyday experience of the world, that is, on our life-world (*Lebenswelt*) as Husserl came to call it later in his *Crisis* (1970).

Thus as far as a starting-point is concerned, we may say that whatever theories and constructions the scientist may put forward, he always has to start from the life-world (Husserl 1970:142–143). This life-world, however, is still a quite sophisticated and, above all, structured context; it contains many levels of knowledge, as well as values and culture (1970:133; 139–140).

The same kind of conclusions as Husserl's are expressed in the more recent writings of N. R. Hanson (1961, 1969), T. S. Kuhn, and others. Kuhn (1970) argues that a scientist always sees the world in terms of some frame-work or 'paradigm'. He says (1970:10) that by choosing the latter term, 'I mean to suggest that some accepted examples of actual scientific practice — examples which include law, theory, application, and instrumentation together — provide models from which spring particular coherent traditions of scientific research.' A scientist thus always works within a framework of presuppositions, some of which may be made explicit, but many of which remain unconscious. As Kuhn (1970:85) says: 'Scientists do not see something as something else; instead, they simply see it.' They become conscious of a problem because the paradigm functions as a

background: 'Anomaly appears only against the background provided by the paradigm' (1970:65). Thus we only see a problem when our expectations, fitting in with a particular context, are not realized. An event or object by itself cannot be problematical.

Although Popper disagrees with Kuhn's main idea and believes that science, rather than existing in separate frameworks or paradigms, can approach (but probably never attain) actual truth (1969, ch. 10) — he does say that every scientific problem must have been preceded by some other problem. There is no 'beginning', no first problem in science. Practical problems arise very early, even before there is consciousness: 'Organic structures and problems arise together' (1976:133). As problems are solved, new problems arise, and so on, until we come to what is known as science. Problems, says Popper, even practical problems, are always theoretical. The correlate of this, however, is that theories are always tentative solutions of problems (1976:135). In other words, scientific problems arise in a context that is already there, with its presuppositions (1969:238).

The upshot of all this is that we cannot demand a science without presuppositions. Scientific questions (problems) arise in a certain situation, against a certain background, as philosophers as different as Husserl, Popper and Kuhn agree. This background itself is not neutral; but precisely because it is a background, it is largely unconscious. Thus science inevitably starts with presuppositions.

Can we, perhaps, make explicit all our presuppositions, more or less in the Cartesian manner of starting from a known base? We saw that any formal context is embedded in an informal, intuitive one in turn. So we must look here. Husserl in his later writings actually tries to find the most basic experiences. If we are ever to unearth all presuppositions, it might be by uncovering just such a basis. Husserl goes back to the pre-predicative world, the world of immediate experience without the intervention of language (*Experience and judgment*, 1973). But even here we are not free of presuppositions and a necessarily pre-given structure; the recognition of individual things, for example, which may be seen as the primary experience, presupposes the field in which such things exist (1973:29–30). In knowing or recognizing something, man always 'knows' more than that of which he is conscious (1973:31–32). The background structure, in the life-world

as well as in the pre-predicative context, is necessarily shared by human beings in communication. Human beings learn and become human in a social context (Kistner 1984, ch. IV).

We can apply Husserl's kind of reasoning to the logical positivists' sense data as well. Here, without some organizing principle, we could not collect data into a meaningful whole (Kistner 1984:72-73). We must give up the idea of a presuppositionless totally explicit foundation of inquiry, for ordinary life as well as for science.

It is worth noting that the presuppositions of science occur on all levels, not merely regarding the direction in which solutions are sought (What was the cause of the Big Bang; Why does South Africa have so many divorces; How can we detect lung cancer in an early stage?) but also in the selection of the problems themselves. This covers not merely a choice between what is or what is not a worthwhile subject for research (Should we put a man on the moon, or rather use the money to prevent blindness in Africa?), but also what strikes us as being a problem in the first place. An example is Olbers' paradox: if the universe is infinitely large, and if it is empty so that nothing impedes the propagation of light, why is the sky black at night? Most people who believe the antecedent conditions to be true do not go on to formulate the question, that is, they do not even see that there is a problem at all. It seems more important to concentrate on the size and age of the universe, or the conditions for the propagation of radiation. And how many people before (and since) James Watt have been irritated by the noisy lid of a boiling pot, yet how many have asked themselves how the power that lifts such a lid could be made useful? In short, even the fact that a problem occurs at all requires a background. Next, the formulation of the problem rests on presuppositions. If marriage were not important in our society, divorce would not be a problem. So do we locate the divorce problem in the bourgeois view of marriage, or in the divorce figures themselves? Are we content to say that we cannot go back beyond the Big Bang and can at best try to find causal relations within those first milliseconds, or do we look for a plan or purpose behind the way the world is?

The idea of looking for a plan or purpose behind the world as it is would be ruled unscientific by many people. So even the concept of science itself rests on certain presuppositions. What is involved in rational

inquiry? The problem shows itself particularly clearly when we go to other cultures. In his discussion of Westerners' views of the Zande belief in witchcraft, Winch (1964:160) says that Evans-Pritchard, attempting to describe the Zande views, found it difficult to return to 'a clear view of how things really are'. The point Winch is making in his paper, however, is that there is no way in which 'things really are'; that, given the Zande presuppositions, their data and their theories are as rational as those of Western science. Thus what is a problem for the Azande, and what counts as a solution, differs from what is a problem or solution in other cultures, and if Winch is correct, we have no way of rationally deciding between the presuppositions of one or the other culture. They have different world views, and therefore any rational inquiry will be different, since reality is always conceived in terms of language and culture. We cannot split one part of reality — that which is amenable to rational inquiry — from someone's world view, since what constitutes rational inquiry is part of one's world view. Macnamara (1980:17) characterises a world picture or world view as 'a conceptual framework in terms of which one tries to interpret reality'; he says (1980:30) that a world picture provides one with intellectual bearings and a value system. The matter of presuppositions thus goes a long way beyond our being confronted with a problem to which we wish to apply science. Because science as we usually conceive it is totally Western in character, however, there is only one science by definition, and the further complication of different world views is not always seen. Yet the realization that another world view may mean another science, merely takes our original presupposition problem back another step.

So far we have argued that without presuppositions there could not be any science at all. Questions can arise only on the ground of certain preconceived expectations. Nor can we formulate all presuppositions, since they only become visible when they in turn cause some problem. And further, listing prejudices or trying to see other points of view is again done from a specific standpoint with its own presuppositions in turn. What, then, can a scientist (or a philosopher or a teacher or a housewife) do in order to minimize the chance of being adversely influenced by them? Quite obviously, there is no ready-made answer or solution.

One reaction to the lack of 'objectivity' or presuppositionless science is a sense of freedom from restraint: everything seems to become

possible. Although Kuhn's theory has met with severe criticism, for example from Popper's followers (Lakatos 1970:93, 178), it also has been welcomed, especially in the social sciences. Kuhn's denial of the possibility of choice on rational, scientific grounds, has been welcomed by some people as leaving a place for theories that are generally considered scientifically dubious — for example, it may be claimed that parapsychology or witchcraft can no longer be rejected out of hand, since there are no neutral data outside a paradigm by which one might judge that paradigm, complete with its inherent presuppositions. Van Dongen and Gerding (1983:118–120) make a plea for eventual acceptance of parapsychology with reference to Kuhn. They see parapsychological events as anomalies that may eventually lead to a new paradigm. Roy Wallis (1979:5) claims that in general 'particularly under the liberating impact of Thomas Kuhn's bold challenge to this complacent [orthodox] view of scientific knowledge — sociologists and historians have adopted a more methodologically "agnostic" view of the truth claims of scientists'.

Richard Rorty (1980:348–349; 388) has another approach. He thinks that we probably should not even try to make all our knowledge commensurable or 'objective' (p. 335). The emphasis should be on conversation, not on true knowledge (1980:373, 378). We should choose a theory because it is interesting, in whatever sense, not because it is true. Or perhaps we should choose theories because they lead to actions alleviating the oppression of people.

Others, not happy with these more or less relativist solutions, declare that we should make an explicit choice of approach. Habermas and Bernal, for example, think that 'objectivists' are merely hiding their ideological partiality from themselves. Habermas (1981:308–309) contends that our interests inevitably direct our attempts at objectivity in science. Bernal (1971:923) argues that in a society consisting of classes, these class divisions permeate science in material and ideological ways, and influence the structure, development and uses of science, and he goes on to say: 'De opeenvolgende technische transformaties, van het ontstaan van de beschaving tot op heden, werden op ieder keerpunt gemotiveerd door de belangen van individuen en groepen uit de heersende klasse van dat moment.'

As a consequence of such views, some scientists, notably from Marxist or orthodox religious backgrounds, have taken the step to make

explicit their own conscious choice of a specific ideological approach, thus hoping to bring into the open a stance that remains unconscious in others, and so perhaps to avoid a number of pitfalls (Duvenage 1987:21–22). But this strategy will not work, because as we showed, it is logically impossible to state all one's presuppositions. Such a move thus merely provides an undue restriction of the scope of one's research.

Both approaches, however — the 'anything goes' and the 'state your starting-point' kind — seem unduly defeatist. Descartes found that we could at any time be mistaken in what we thought; he concluded, erroneously, that we can be mistaken at all times. We seem to have a similar view here: since science can be partial, and can have wrong presuppositions, should we give up altogether trying to strive for an impartial science that is seeking truth? Reality has a way of intruding upon our constitutions. We are to some extent free to choose, or perhaps one should rather say, to fall into or to be socialized into, a world view with all the presuppositions entailed by it. Accordingly, we construe the world as consisting of these facts and not those; to see some things and not others. (It does not follow that we, as the Existentialists believed, are totally free to choose ourselves to be other than we have become.) But reality hits back: we can make mistakes in natural science. Sartre says that a rock can be seen as an obstacle to be overcome, or as something insurmountable. Nevertheless, it is not a puddle of water. The same holds for science. Bellarmini, with his opposition to Galileo's ideas, and Lysenko, with his theory of transmission between generations of non-genetically acquired characteristics, eventually ran into a wall of facts that were facts for everyone. Whatever anthropology we have, people become ill, get well, are born and die in an objective sense. Astrology is not a solution to the problem of cancer. And so on.

As Husserl already found, this does not mean that we can pick out a fixed set of rock-bottom facts, true for everyone. Nor can we detect all presuppositions. There can be no rules, let alone a decision procedure to find them. Finding a presupposition means a new way of looking at a situation, drawing to the front something that has always been in the background. Scientists never have a mere 'bundle of data' at their disposal: the case is more difficult than that. The data have been singled out from a situation, and another selection may have to be

made. This may require real creativity, and it is the merit of Hanson and Kuhn to have shown this very clearly.

Openness to the detection of presuppositions will be stimulated if scientists are as flexible as possible, able to look at a situation from as many perspectives as can be managed. Nobody can be blamed for having presuppositions: we could not function without them. We can, however, try to create the conditions that make it easier to detect them when necessary. We can read widely, talk to people working in other fields of our own discipline or working in different disciplines, all the while keeping the general problem in mind.

In order to get to grips with a problem it must be seen against the background of its context. However, if we wish to see an object against a background, we must look at it from more than one perspective (the most basic instance, perhaps, is the role of binocular vision to separate object and background). Scientists do normally try on their own to accomplish this multiplication of perspectives first of all by reading other studies of the subject, and by applying an analysis along methodical lines: How did the problem arise? What is known about this and related issues? What kind of solution might be useful? and so on. We usually find answers to these kinds of questions in the introductory parts of research papers. But a scientist may also find it helpful to draw in people from a slightly different group, or even from a totally other background. Watson (1968) reports that in the search for the structure of the genetic molecule, the opinions of fellow scientists working on *other* problems were sought as a matter of course. Scientists also may bring in colleagues from different disciplines. Einstein the physicist was assisted in the development of his general theory of relativity by the observation of the mathematician Minkowski that formally, in Einstein's transformation formulas for special relativity, the factor relating to time could be taken as fourth coordinate with the three spatial coordinates  $x$ ,  $y$  and  $z$ . This led to the conceptual unification of space and time into a four-dimensional space-time continuum (Lanczos 1974:91-92). Einstein, who struggled with the mathematics needed for his theory, must have seen the formulas merely as a means to a specific preconceived end, while Minkowski was aware that mathematics has a structure that may in itself provide important clues.

Another case where contact between scientists working in different fields led to a breakthrough was the discovery of the background

radiation left over from the Big Bang birth of the universe. In the early 1960s, Penzias and Wilson at the Bell research laboratories, New Jersey, found a puzzling 'noise' in a new horn antenna developed for radio astronomy. They went to great lengths trying to eliminate the source of the noise. More or less by accident they heard about the theoretical prediction by Dicke's team at Princeton that the universe would show a background radiation with a temperature of a few degrees K. But when Dicke first entertained this idea, his radiometer was not sensitive enough to pick up this low radiation. Then the two teams heard about each other, and the puzzling radiation observed by Penzias and Wilson was explained. They had, however, wasted quite some time trying to eliminate the background noise, on the assumption that it should not be there (Gribbin 1987:181-193).

I suggest that the attempts at contact with other scientists are successful, not merely because additional data are obtained, but because such contacts create additional perspectives. We may also find such strategies useful in raising and solving problems in the social sciences and the humanities, and of course in philosophy. Philosophy through the ages has its own presuppositions, for example Descartes and Locke simply assume the mind to be first and foremost an individual ego, before it enters into communication; and an entire chapter in the philosophy of mathematics rests on the presupposition of a denotation theory of meaning, necessitating the search for a referent of the term 'number', leading to the platonist, formalist and intuitionist theories.

In the light of our considerations, Macnamara's initiatives for preliminary interdisciplinary and inter-trend philosophical exploration (Macnamara *et al.* 1980, 1985, 1986, 1987, 1988) are noteworthy. Some examples of interesting issues arising from these investigations are the following:

- (i) In daily life, elegance is normally accepted (taken for granted) as being the cherry on the cake of serious business, but in the light of its place in science and mathematics, it may actually have a more basic role to play in other contexts as well.
- (ii) A romantic poem is generally seen as an item of expressive language, and therefore not amenable to considerations of formal logic. However, it also is an attempt at communication in language, that is a set of (more or less) explicit statements, and so

it might still be possible that logic can teach us something about such a poem.

- (iii) Given that Hobbes, naturally read mainly as a political philosopher, sees relations between nations as analogous to relations between individuals, perhaps we could in another approach extend the analysis of existential meaning to the international context in a similar analogy.

All this is not a plea for eclecticism. We usually cannot simply combine features from different approaches, just as we cannot combine different aspects of the two views of the Necker cube. But the mere realisation that there exist different justifiable points of view does alert us to assumptions that may remain hidden in the single taken-for-granted aspect. For the Necker cube, for instance, if we knew only one of its 'appearances', we should miss the function of perspective and general surrounding context, as well as the observer's constitution, in making sense of what we see.

In conclusion, we have found that science inevitably carries with it a number of presuppositions. Many people are put off by this, seeing it as a serious shortcoming, and some come to the conclusion that we must give up science as we know it. Others welcome the opportunity of actively choosing an explicit standpoint, but such a move merely restricts scientific research, without accomplishing its purpose. A better policy is to be flexible, in order to have access to more than one perspective. Koestler (1966:712-713) remarks on the 'characteristic property shared, apparently, by most great scientists: one may call it the "multiple potential"' — once again, a matter of being equipped to appreciate more than one way of seeing. To the extent that science is a sample of human rational thought, our considerations about science hold for all rational endeavour.

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