HISTORY OF THE HUMAN SCIENCES Vol. 17 No. 4
 pp. 45–68
[17:4;45–68; DOI: 10.1177/0952695104048072]

Technics and (para)praxis: the Freudian dimensions of Lewis Mumford's theories of technology

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ABSTRACT

The purpose of this article is to establish that Lewis Mumford's historical and philosophical writings were heavily influenced by the psychoanalytic theories of Sigmund Freud. It is argued that Freudian ideas and concepts played a foundational role in the construction of Mumford's views on the nature and function of mind, culture and history, which in turn founded his views on the relationship between technology and society. Indeed, it is argued that a full understanding of Mumford's technological writings cannot be achieved until one has grasped their psychoanalytic influence. To this end, this article will reconstruct the psychological views of Lewis Mumford and indicate how they draw upon and modify Freudian theory. It will then be shown how Mumford's theory of the psyche interacts with Mumford's own concept of the idolum. This interaction, I will argue, considerably underpins Mumford's holistic views on the relationship between society and the individual and between the internal and external world and will require us to reconsider our understanding of Mumford's philosophy of technology, particularly with regard to his descriptions of monotechnics and biotechnics, the authoritarian and democratic technological forms. It will be argued that for Mumford the division in

technics corresponds to a division in the human psyche, and indeed arises from it. Not only will an appreciation of Mumford's Freudian influence alter our understanding of Mumford's technological writings in general, but also in particular it can enable us better to comprehend the reasoning behind Mumford's recommended method of resistance to the modern power complex of the megamachine. Such a revised understanding of Mumford's philosophy also undercuts any attempts to characterize his position as being a technological determinist one. Rather, his philosophy of technology is better understood as a form of technological voluntarism.

Key words Freud, idolum, Jung, Lewis Mumford, technology

INTRODUCTION

Lewis Mumford was one of the 20th century's most prolific and consistent writers. Before his death on 26 January 1990 he had published almost 30 books and over a thousand essays and review articles. In a writing career that stretched from the 1920s to the 1980s he contributed to, among other things, literary criticism, urban planning, sociology, aesthetics, and of course the history and philosophy of technology. On the latter subjects Mumford is probably best known for his pioneering works in the history of technology, *Technics and Civilisation* (1934) and *The Myth of the Machine*, published in two parts as *Technics and Human Development* (1967) and *The Pentagon of Power* (1970). These books represent a masterly synthesis of an encyclopaedic range of works in the history of technology and society from the neolithic period to the modern day. Though Mumford's views do shift to an extent over his considerable career, his technological writings demonstrate a remarkable consistency in both purpose and position. As a historian of technology his significance is undeniable.

However, intermingled with Mumford's history of technology lies an innovative and historically informed philosophy of technology and thus the books mentioned above stand as seminal texts in both the history of technology and the philosophy of technology. They address what Donald Miller, his biographer, calls his 'dominating idea and theme – the rise of the machine and the mechanistic outlook in the Western world' (Miller, 1989: 163).

Mumford argued that throughout human history different forms of technology have developed in relative opposition to each other. The distinction between these forms of technology is not simply a matter of form or sophistication but the type of human social relations they instantiate. Different technologies, or technics as Mumford refers to them, both reflect and reinforce societal movements and interests and the world-view that underlies them. At

present the more democratic forms of technics have declined while the more authoritarian variety of technics has risen to dominance. This latter form of technics is mechanistic. Mumford argues that this mechanical mode of technological existence is intrinsically hostile to human life and human flourishing and to sustainable social and environmental relations. Although he always remained convinced 'that human nature is biased toward autonomy and against submission to technology in any of its forms' and that humanity could renew itself and thereby free itself from its self-constructed technological prison, Mumford's work has frequently been characterized as technological determinism (Miller, 1990: 157). The teleological way in which Mumford describes the development of modern technics seems to many to suggest that social agency rests with the machine alone, rather than with the individual or society. I believe this view to be fallacious and intend to conclude by disproving any such deterministic readings of Mumford's position.

The purpose of this article will be to establish that Lewis Mumford's historical and philosophical studies of technology were heavily influenced by the psychoanalytic theories of Sigmund Freud and, to a lesser extent, those of Carl Jung. The point that Lewis Mumford was influenced by the work of Freud is hardly novel and has been noted by several commentators. However, most of those who have previously commented on this influence tend to view it as relatively minimal or isolable within his work, or else point to Jung as having had a more profound influence, although again of a limited nature.[1] I intend to argue that Mumford's Freudian influence permeated most of his work, and played a foundational role in the development of his theories of mind, culture and history, which in turn founded his views on the relationship between humanity and technology. I will further argue that the purpose of Mumford's historical work and its role in his philosophy cannot fully be comprehended until one has recognized this psychoanalytic influence. In particular, it will be suggested that Mumford never intended his historical work to be considered as history 'proper' but rather as a means of psychoanalytic diagnosis. Thus the present practice of uncritically using Mumford's work as a secondary historical source must be re-evaluated.

To this end the article will attempt to reconstruct the psychological views of Lewis Mumford, and to demonstrate the central role that they played in the construction of his position on the relationship between technology and society. First this paper will outline Mumford's historico-psychological project, and its use of both Freudian concepts and Mumford's own concept of the idolum,[2] and will describe the ways in which it connects to Mumford's theory of technology. It will then detail the ways in which Mumford absorbed and modified the Freudian model of the psyche. Then, the fundamental but largely overlooked concept of the idolum will be detailed, as will Mumford's account of the interaction of the psyche and the idolum. This

interaction, I will argue, considerably underpins Mumford's holistic views on the relationship between society and the individual and between the internal and external world and will require us to reconsider our understanding of Mumford's philosophy of technology, particularly with regard to his descriptions of monotechnics and biotechnics, the authoritarian and democratic technological forms. It will be argued that for Mumford the division in technics corresponds to division in the human psyche, and indeed arises from it.[3] Not only will an appreciation of Mumford's Freudian influence alter our understanding of Mumford's technological writings in general, but in particular it can enable us better to comprehend the reasoning behind Mumford's recommended method of resistance to the modern power complex of the megamachine.

HISTORY AS PSYCHOANALYSIS

The New York of the first half of the 20th century in which Mumford grew up and worked appears to have been a place in which psychoanalytic ideas had great currency.[4] Mumford not only read Freud and Jung, and came under the influence of friends like Henry Murray who practised Freudian and Jungian psychoanalysis, he also applied Freudian theory to himself to gain deeper self-knowledge.[5] Mumford viewed the development of Freudian psychoanalytic theory as a progressive and corrective step in the study of humanity. For him it represented a shift in scientific focus from exclusive concern with the manipulable external world, to the systematic exploration of the inner world. It was the application of the power and rigour of science to the hitherto neglected 'subjective' aspects of existence, and viewed as such its findings had considerable significance for Mumford's studies of technology and society.[6] It should not be thought that Mumford uncritically adopted Freudian theory and applied it wholesale in his philosophy.[7] Rather Mumford's relationship with Freudian theory is one of critical engagement and evaluation, and the position at which Mumford arrives on the nature of the human psyche is qualitatively different from Freud's own position. This situation is largely due to his fusion of psychoanalytic theory with his own concept of the idolum, an ideological field that permeated all human activity. Despite this fact, the character of Mumford's work is fundamentally Freudian.

Though he is often taken to be a historian of technology, with a proper understanding of his conception of the nature of the human organism we can better comprehend the intentions that lay behind Mumford's historical studies (Mitcham, 1994: 42). The idolum, which will be discussed in greater detail below, not only provides humanity with a means of understanding and giving meaning to its present actions, it also provides a means for humanity

to create its future state. In addition to these qualities, it also provides a means of understanding a society's past, the ways in which it has come to be that which it is today. By maintaining a link with the past, the idolum also provides humanity with a resource: a means by which to give present existence further significance, and a means by which humans might change that present. Mumford was convinced that western society had come to a state of crisis, of environmental, social and psychic disintegration.[8] The failure to recognize the necessary conditions for man's healthy development has resulted in a deathly society. Its lack of internal balance has resulted in the misdirection of psychic energies to the causes of bestial self-indulgence and aggression. The adoption and propagation of a global mechanical idolum has resulted in the construction of technologies and habitats unfit for human life. It is by means of our connection with the cultural and psychic life of our ancestors through history that we have the potential to create a life-serving future state.

Through his historical studies of technology and society Mumford intends to provide us with a means of 'spiritual psychoanalysis' (Mumford, 1944: 14; 1970: 411). At present western society has created a utilitarian super-ego, one that both serves and exalts the mechanical ideology (Mumford, 1944: 168). This ideology denigrates the emotional, the organic, the spiritual, in short, the subjective aspects of humanity's existence. Instead it values the atomic, the calculable, the manipulable, objective aspects of existence that have economic utility. This denial of the subjective is reflected in the construction of a technological society whose habitats and artefacts reflect the mechanical ideology and which in turn construct a mechanical mode of human existence. In this repressive environment the stability of the psyche cannot be maintained. 'The metropolis is rank with forms of *negative vitality*. Nature and human nature, violated in this environment, come back in destructive forms' (Mumford, 1938: 271). The life-asserting energies of the libido have little place in this environment and remain unchannelled, except in corrupted, diluted forms that are of advantage to the mechanical society. Lacking an appropriate life-directed super-ego, the ego has no cause to seek future change, and becomes present-fixated, convinced that the present state is the ideal state. The degraded id then attaches itself to inappropriate forms, such as commercial fetishization (Mumford, 1944: 308; 1946: 232). In time the pent-up emotional energies of the id reach a level at which they can longer be contained and they are vented in displays of barbarism and aggression of the lowest animal level. Humanity seeks either to destroy others as a means of reawakening a sense of its very own existence, or else seeks to destroy itself as a means of escaping its mechanical imprisonment. Mumford states: 'The id is organically bound to the ego and the super-ego, and . . . when interplay between these portions of the personality ceases, a profound disorientation of the whole personality, tending toward destructive aggression or toward

suicide, must follow' (Mumford, 1944: 271). Mumford here acknowledges the existence of Thanatos, or the death drive, but asserts that it is the product of a particular point in human culture rather than an innate drive. 'It is a historic phenomenon, time-conditioned, place-conditioned, culture-conditioned. . . . The death wish appears as a collective impulse: an effort to save life from further defeats, from more unbearable indignities, through suicide' (Mumford, 1938: 271).[9]

The harmful effects of modern technics, which most commentators take to be the focus of Mumford's writings, are for him but a reflection of humanity's psychic imbalance. 'Technics has been deeply modified at every stage of its development by dreams, wishes, impulses, religious motives that spring directly . . . from the recesses of man's unconscious' (Mumford, 1970: 415). The separation of the will-to-power from the will-to-life has resulted in psychic disintegration, a disintegration that has in turn moulded the character of modern technics. Mumford clearly states that 'in the depths of man's unconscious life lie the forces of destruction he projects outside of himself and externalises' (Mumford, 1946: 246). Modern technics then is the externalization of humanity's fractured inner life (Mumford, 1970: 411). The hyper-rational super-ego denies the id, and thereby fails to direct its energies. This repression of the id 'must lead to the destruction of the personality, or to an explosive discharge of the id elements' (Mumford, 1944: 366). This belief lies at the heart of Mumford's concern with technology. It is not so much what ills technology has carried out in the past, or even what ills it is carrying out in the present, that occupies him, but the thought of what humanity might do in the future with its increasing technological powers and decreasing mental stability. For in such a future he fears that 'instead of sublimating barbarism civilisation then produces a more terrible variety of barbarism, for to the animal energies in which all men share it adds those powerful technical and social facilities which civilisation has itself created' (Mumford, 1944: 366).[10]

Given that we can now understand the ramifications of the psychic instability caused by the present mechanical idolum, Mumford argues that we must seek a way to reconstruct society, at the level of both the material and the mental, in such a way as will provide the type of dynamic equilibrium that he prescribes. The human ability to construct a level of symbolic representation and communication enables us to understand and communicate with others in our present day. It not only enables practical activity, such as coordinated labour, it also enables spiritual transactions, the transferral of a super-ego ideal or a new idolum from one person or community to another. This symbolic field also enables us to grasp and communicate with the thoughts and ideals of past societies (Mumford, 1944: 8). In a manner very reminiscent of Collingwood, we are able to relive and rethink the thoughts of our historical predecessors.[11] And by doing so we are able to identify the

roots of our present crisis, and address them.[12] 'People whose course of life has reached a crisis must confront their collective past as fully as a neurotic patient must unbury his personal life: long-forgotten traumas in history may have a disastrous effect upon millions who remain unaware of them' (Mumford, 1944: 14). 'It is only by this act of deliberately recapturing the past that one can escape its unconscious influence' (Mumford, 1944: 12).

It should not be thought that Mumford's historical psychoanalysis is intended only to free us from the burden of a collective past. 'History is a reservoir of human creativeness' and from the reservoir Mumford wishes us to recognize and re-create past ideals and modes of existence that better serve human purposes (Mumford, 1944: 12). 'History has an anticipatory side: it is the domain of the possible, the starting point of the ideal' (Mumford, 1944: 13). This search in our past for new potentialities should not be thought of as a form of Romanticism. Mumford does not seek to re-create whole a past civilization, or way of life, but to point out elements of the past that may be synthesized with elements of the present into a greater whole. Nor is this historical project a form of escapism, a means of avoiding the realities of present society. Mumford presents the entire scheme in a rather Jungian light (Jung, 1998: 60–4). Humanity has developed its capacities unequally (Mumford, 1944: 417). Our will to order and control has developed at the expense of the will to live. Faced with the present crisis that this one-sided development of the human character has brought about, we must retreat into the 'unconscious', our collective past, in order to 'call up reserves from the collective unconscious which has possibilities of wisdom denied to consciousness' (Brown, 1964: 49). To develop a 'creative adaptation' humanity must learn, as J. A. C. Brown puts it, '*reculer pour mieux sauter*'.

For Mumford history is psychoanalysis on a global scale, rather than Freudian psychoanalysis for the select few on the psychologist's couch, and what is gained is an awareness of the organism's needs and the need for the construction of the appropriate environment. The idolum 'is a sort of house of refuge to which we flee when our contacts with "hard facts" become too complicated to carry through or too rough to face', and at the same time 'it is by means of the idolum that the facts of the everyday world are brought together and assorted and sifted, and a new sort of reality is projected back again upon the external world' (Mumford, 1923: 15).[13] Once again to progress individually humanity must call upon and participate in the social life of the people and in doing so enable their society to progress.[14] As Mumford says, 'Human beings and groups are the outcomes of an historic complex, their inheritance, and they move toward a conditioned but uncertain destination, their future. The assimilation of the past and the making of the future are the two ever-present poles of existence in a human community' (Mumford, 1938: 301–2). Thus Mumford's historical studies of technology and culture may now be seen for what they are: a user's guide to the past failures and future

possibilities of human history and a manifesto for the use of this knowledge in the construction of an integrated society and psyche.

THE ID, THE EGO, AND THE SUPER-EGO

Mumford adopts Freud's model of a tripartite psyche divided into the id, ego and super-ego. However, while Mumford's conception of the ego is taken essentially unaltered from standard Freudian theory, his conception of the id and the super-ego and the interrelations of all three parts is considerably different. The standard Freudian account of the id characterizes it as the innate, blind, primal drive towards sexual gratification. The ego is that rational aspect of the id which comes into contact with reality and which serves to mediate between the irrational demands of the id and the exigencies of reality. The super-ego is the moral censor of the psyche. Constructed out of the inherited mores of the wider society, the super-ego is as irrational as the id, and likewise imposes its moral demands upon the ego regardless of the state of reality.[15] It is the role of the ego to mediate between these two conflicting drives, to gratify the urges of the id and meet the imperatives of the super-ego. Psychic problems occur when the ego fails to maintain a dynamic equilibrium between these competing aspects of the psyche. In his later work, Freud added another dimension to his model of the mind. In opposition to the basic, biological urges of the id and the acts of the ego, which seeks in some way to gratify them, stands Thanatos, the death-instinct.[16]

This drive reacts against the constant demands for gratification issued by the id by seeking a state in which all such demands have ceased. In other words, the cessation of the organism's existence. When the ego acts to satisfy the sexual and self-preserving demands of the id, it employs the mental energies of the id to this end. Likewise when the ego acts under the pressure of the super-ego to deny the sexual urges of the id it employs Thanatos, the energies of the death-drive, to do so. However, within the tripartite psyche, energy repressed at one point is merely displaced elsewhere, so any repression of the death-drive results in its displacement into aggressive behaviour towards others (Leahey, 1997: 242). Nor can one safely give full sway to the imperatives of the id without lapsing into the condition of humankind's animal ancestors. Indeed, it is only through the repression of the id's sexual urges and their redirection into other more socially acceptable channels that the creation of a civilization has been possible. However, all such repressions of the id serve the death-instinct, and necessarily limit or reduce the amount of happiness that humans can experience.

A prominent characteristic of the Freudian theory of the mind is its strongly biological, as opposed to social, nature. The id is innate, the primary aspect of mind, and operates to fulfil needs common to all animals, namely

procreation and self-preservation. The ego, the reality principle, is the interface between the animal needs of the id and the actualities of existence, and is also an essentially biological characteristic. While the super-ego may appear to be socially imparted, in that it represents the moral attitudes of a society, it too has a decidedly biological character, albeit a Lamarckian one.[17] The repressive moral strictures of the super-ego are inherited. Thus, humanity is presented in a socially atomic state (Brown, 1964: 14). Each person contains within herself or himself by nature the tripartite psyche. Any mental problems that may occur are self-originating, resulting from the conflict between the psyche's competing drives. The only role reserved for society, aside from an indirect role in the repression of the libido through the super-ego, appears to be as an environment in which humanity can find gratification for its sexual or aggressive urges.

Mumford's version of the id retains its role as in earlier Freudian theory as the sole psychic motive force. The libido is still described as a largely sexual drive but in Mumford's treatment this drive is taken to contain such higher sentiments as love, and the desire for creation and self-expression. Thus the libido, for Mumford, is in and of itself a relatively benign force for life, 'the bearer of the primal energies and vitalities' (Mumford, 1944: 424). As such it is far closer to Jung's characterization of the libido as 'vital energy' (Jung, 1998: 51). The key reason for this deviation from Freud's depiction of the id appears to be Mumford's unhappiness with what he saw as Freud's overly Darwinian characterization of the mind. An example of this would be the portrayal of the id as an essentially selfish drive, seeking only its own gratification in the lowest possible animal sense, and the portrayal of the super-ego as essentially repressive, constantly striving to curb and repress the libido. Rejecting the Malthus-inspired Darwinian notion that the natural state of existence is solely one of strife, Mumford looks to the work of Kropotkin to provide a fuller account of the operations of nature, one based on cooperation and mutual aid (Mumford, 1938: 302; 1944: 332).[18] Given his more pacific understanding of the operations of nature and natural organisms, one can understand why Mumford's characterization of the id, the aspect of the psyche most connected to humanity's animal past, appears less pessimistic than Freud's.[19]

Mumford also rejects the Freudian notion of the necessary struggle between the id and the super-ego. While Mumford conceded that the operations of the super-ego can be repressive, and that the id and the super-ego can at times be in conflict, he argues that this situation is by no means inevitable. The super-ego, for Mumford, can be and should be a 'positive force' rather than 'the hostile limiter of the ego's freedom' (Mumford, 1944: 424). Mumford argues that the ideal psychic state is one in which all the psyche's component parts operate in harmony. The id provides a natural drive for love and social companionship. The super-ego provides a model, an ideal, for the

ego to aspire to. It is this ability to set goals for itself and to strive to reach the point at which they may be fulfilled that enables humanity to develop at both the individual and social level. The super-ego has 'the mother role of nurturing and liberating the positive expressions of life' rather than 'the role of the hostile patriarchal father ... forbidding, threatening, punishing' (Mumford, 1944: 363). A healthy super-ego will enable the benign expression of the energies of the id, and will direct those energies towards the development of the organism. 'As a creator of positive standards the super-ego nurtures the capacity for expression and life-fulfilment' (Mumford, 1944: 424). Thus the goal for society should not be to encourage the independence of the ego from the influence of the super-ego, as Freud argued, but to create a more life-enhancing super-ego. 'The object of sound development is to effect a working harmony between the three operative parts of the personality, thus doing away with abrasive conflicts and disruptions' (Mumford, 1944: 424). If the appropriate super-ego is in place, that is to say, one that recognizes the essential organic needs of man, both biological and spiritual, then the organism will have achieved a state of psychic harmony.[20]

THE IDOLUM

From the outset Mumford argues that man is not by nature '*homo faber*'. That is to say, that although humanity indeed does and apparently ever has used tools, this is not the primary or even fundamental expression of its true character. 'Man was perhaps an image maker and a language maker, a dreamer and an artist, even before he was a toolmaker' (Mumford, 1952: 35). In outlining just what man's 'true character' might be, Mumford avoids the simple nature/society dichotomy in favour of a more subtle blend of both biological and social factors. Given its inescapably biological nature, humanity must work to secure for itself the means necessary for its continued existence. However, while this is the immediate purpose of work, given both man's social nature and higher cognitive capacities, the function of work is not exhausted by its role as a provider of material necessities. While all organisms must work to survive, humankind has the capacity to set its own ends towards which it works. Thus while labour provides sustenance it also, and equally essentially, provides man with the means to fulfil those of its purposes which lie above the purely biological. Through its work, humanity can give meaning and shape both to its own existence and to its environment. 'Man gains, through work, the insight into nature he needs to transmutate work into artifacts and symbols that have a use beyond ensuring his immediate animal survival' (Mumford, 1944: 5). It is this symbolic level and function of humanity's labour that gives it its social role and significance.

Thus, while labour does meet the conditions necessary for existence, that

is not its central purpose. This symbolic, or hermeneutic, level of human existence, which labour enables, is its central purpose. Through labour and the symbolic significance that man provides for it, humanity can give meaning not only to its work, but also the product of that labour; the tools and artefacts used in that labour, the natural environment that its labour brings it into contact with, and the artificial environment of its constructed habitats. And in doing so humanity also gives meaning to its own existence, which for Mumford is the true purpose of all genuinely human activity.

In effect the result and end of human labour is the creation of what Mumford terms the idolum, 'a symbolic milieu composed of images, sounds, words, fabrications, and even natural objects to which man has attached a representative value' (Mumford, 1944: 8). This symbolic level of human existence is not a social construct, which interposes itself between man and reality, screening or distorting the ways in which humanity perceives itself and its environment. Rather it is a way of complementing existence. 'Symbols are not vicarious substitutes for experience but a means of enhancing it and enlarging its domain' (Mumford, 1944: 9). By providing a higher level above mere animal existence, the idolum enables humanity to develop beyond its present state. The existence of this symbolic milieu enables humanity to share experience, meaning and values with a wider social group. In short, it enables human social life.[21] Thus it is only through social existence that humanity can truly live fully, that is to say, participate in both the material and spiritual life of mankind. While it is conceivable that a person might, through his or her own labour, ensure their individual survival, their isolation from the idolum of a community would prevent their ascribing any meaning to their labour or existence. 'Only by means of symbols can man widen the powers of discrimination and the acts of choice: only by symbols can he release himself from immediate pressures and cast the events of his life into an order he has pre-ordained and shaped in the mind' (Mumford, 1944: 9). Thus the isolated existence would be more animal than human.

This idolum should not be thought of as simply a mental construct. It is central to Mumford's position that one understands it as possessing both a mental and physical presence. 'This idolum . . . is almost as sound, almost as real, almost as inescapable as the bricks of our houses or the asphalt beneath our feet' (Mumford, 1923: 14). To see how this may be, it is first necessary to understand how the idolum relates to Mumford's views on the human psyche.

THE IDOLUM AND THE EGO

It is the interaction between the human psyche and the idolum of a society that is the key to comprehending humanity's development, both culturally

and technologically. The id, for Mumford, provides humanity with a motive power that the ego channels to certain ends. The positive super-ego guides and supports the ego as it decides in which directions and to what ends it should direct its id-energies. In deciding which ways to act, the ego not only takes into account the directions of the id and the super-ego. It also evaluates the state of its immediate reality in order to comprehend which of its desired actions are able to be realized given the present circumstances. However, this evaluation of the tractability of reality to the wishes of the psyche, and the very awareness that the environment might be altered in such a way as to reflect the will of the individual, is both enabled and mediated by the existence of the idolum. This 'picture of the world . . . experienced in and through a culture, that people carry in their minds' gives order and significance to man's perception of its environment (Mumford, 1944: 424). When the ego chooses to direct its will towards the alteration of the world in some way, the options for action presented to it will be shaped by the idolum. Thus the mind never encounters the world directly, but only through the interpretations of this ideological field.

The significance of this for the development and implementation of technology is as follows. At a very basic, material level a community's understanding of the presence and utility of its environment's resources will be mediated by the idolum. 'With man there is no outer environment available except through the medium of society' (Mumford, 1938: 303). The way in which a community interacts with its environment is shaped by the shared idolum of that community, and the tools or habitats that it constructs out of its interactions with the environment will give material form to a community's idolum-induced understanding of the world and its contents. The way in which a community perceives the world and its own place in it is made material in its constructs. And each new embodiment of the idolum, be it artefactual or architectural, affects the activities and the internal reality of the community. 'Man internalises his external "world" and externalises his internal "world" ' (Mumford, 1959: 528–9). Humanity projects its symbols on to the environment and then manipulates that environment in accordance with them. The resulting change in the human's environment brings about a change in the community's idolum, which in turn brings about further changes in the environment.

Thus, as the ego acts in and upon the world around it, it both shapes and is shaped by the idolum of its society. It is for this reason that Mumford is able to assert the claim that lies at the foundation of his critique of technological society, that there is no meaningful distinction to be made between the subjective and the objective. Through the idolum, the objective and the subjective are in constant interplay. 'Nothing that [man] knows about the universe can be dissociated from the wider facts of his own life' (Mumford, 1944: 11). The values and meanings of the idolum must be materially realized

for them to have any normative impact upon both humanity's conceptions of themselves and their conduct. Thus the material embodiment of the idolum enables humanity to develop by providing it with a new environment more conducive to, or at least more open to, social change. From among the potential changes that the new environment offers, the individual must choose under the guidance of the super-ego. The super-ego acts to save humanity from the danger of stasis by constantly driving it to develop individually and socially beyond its present state.

As we have seen, the id, ego and super-ego operate between themselves to maintain internal equilibrium. However, this balance is also extended to the external world. The ego, in fulfilling the biological needs of the id, is forced to mediate between its demands and the external reality. In doing so it engages with the idolum, the ego-enabling symbolic life of a society, through which it must act and by which it is acted upon. The individual consciousness of each person is thereby inextricably linked to the consciousness of the community. Through the ego, the individual is the social and, in turn, the social the individual. And above the biological id, and the social ego, stands the super-ego that calls upon the individual to grow by engaging with and thereby altering the idolum of the society. 'It is by means of his ideal fabrications that man circumvents his animal fate: his idolum and his super-ego help him to transcend the narrow pragmatic limits of human society' (Mumford, 1944: 11). Here again we see the recurrent Mumfordian theme of organic holism. To grow as individuals we must engage with the world-view of the society, internalize it, and change it. The super-ego is developmental, directing the organism towards self-growth and the growth of society through interaction with the idolum. 'The super-ego unites [man] with his historic social heritage, that is, with the super-organic and ideal worlds he possesses in partnership with other men' (Mumford, 1951: 248). Individual growth is thereby impossible without full participation in the mental life of a community. Likewise the growth of a community is impossible without the growth of its individual members. All is connected, from the internal to the external. If it were the case that a society developed an idolum that did not respect this essential interconnectedness of the external and the internal, nor recognized the need to maintain a balance between the three aspects of the psyche – the biological, the social and the transcendental – then one would expect to see both social and individual deterioration. For the health of the one is dependent upon the health of the other.

MUMFORD'S PHILOSOPHY OF TECHNOLOGY

We are now in a better position to understand Mumford's views on the nature of technology. Mumford's analysis of modern technology is chiefly

concerned with power relations. According to Mumford there have been two different types of technics in human history: democratic technics, also referred to as poly- or bio-technics, and authoritarian technics, or monotechnics (Mumford, 1967: 235). Both these types of technics exist to serve the will-to-power, the fundamental human desire to control and order its surroundings (Mumford, 1934: 84; 1970: 119). Technics in both its forms enable humans to express this will and to alter their environment. The difference between the two types does not so much reside in the technologies themselves but rather in the character of the collective social psyche in which they were devised and for which they operate. With polytechnics, technology was not the dominating characteristic of the society and formed but one aspect among many of humanity's social existence (Mumford, 1970: 136–8). The will-to-power was subservient to what Mumford calls the will-to-function and the will-to-life (Mumford, 1934: 419). The will-to-function is the basic biological urge to maintain the body's well-being, to preserve homeostasis, as a necessary condition for survival. The will-to-life, on the other hand, is the socialized urge to develop oneself as a human being, to grow.

While under the direction of the will-to-function and the will-to-life, the will-to-power was a beneficial drive. The development of forms of technics that secured the necessities of existence and that enabled art and other acts of creativity and self-expression resulted, and it is technics of these types that characterize polytechnics. With monotechnics the will-to-power is no longer curbed by considerations of life or function and is a drive in itself. Under the 'blind' will-to-power, technics is directed solely towards the increase in power, whether it be military, financial or political. It serves as a means of control both over nature and humanity. Given the absence of biological or social constraints, the will-to-power that characterizes monotechnics is insatiable. The power it seeks is unlimited (Mumford, 1970: 167–8). Furthermore, the extension of the technological power complex is hostile to both human development and existence. Though the technological artefacts produced by the monotechnical system can embody and enact this hostility to life, Mumford identifies the technological power complex itself as the source of the problem. The mechanical ideology that the power complex perpetuates is the cause of its power over both the organic and the inorganic. It both facilitated the development of the present monotechnic system and perpetuates it.

Although the monotechnic technological system has a physical existence, for Mumford the most significant aspect of monotechnics, and indeed technics in general, is the ideology that accompanies it. All technics are the product of and embody a social ethos, a vision of nature and humanity: the idolum. The character of the monotechnic idolum is mechanistic. Under this idolum humanity and nature are best understood as mechanical systems, and the ideal environment and social configuration are viewed as being

mechanistic. According to Mumford the concept of the machine first originated with mechanical systems whose components were human. The large armies of workmen who constructed the pyramids are an example of such a machine. The significance of the mechanical configuration was that it allowed a ruler or ruling elite to mobilize considerable force and control over a distance, provided that the human components of the machine operated uniformly. Thus, from the outset the existence of large-scale mechanical systems was coupled with the repression of individual freedom and an authoritarian power structure. However, due to its reliance upon the total cooperation of individuals, this ancient form of megamachine was inherently unstable.[22]

The modern megamachine shares several key characteristics with the ancient form, particularly its requirement for social conformity as an operating condition and its connection with political absolutism. The contemporary megamachine is far more powerful and far more pervasive in its influence than the ancient one. According to Mumford it arose due to the convergence of several social forces and tendencies; namely, mechanistic science and modern capitalism. Modern science, as championed by Bacon, Descartes, Galileo and others, advanced a highly mechanical conception of the physical world. Although Mumford applauds the new science for the insight into physical processes that it brought and its commitment to a code of objectivity and the collective valorization of all novel claims, he argues that the gain in scientific knowledge and predictive power was offset by a corresponding loss in knowledge of the subjective, qualitative dimensions of existence (Mumford, 1970: 68). Modern science ignored the fact that scientific theory is a secondary form of knowledge. That is to say, that humanity's first knowledge of the world around it is a highly experiential, subjective one. Through the imaginative reconstruction of their experiences humans gave meaning to natural processes. Modern science is an abstraction from this primary level of experience (Mumford, 1934: 50–1). It excluded from consideration all factors that might not be represented quantitatively, and in so doing created a division between the 'objective' and 'subjective' dimensions of human experience that had not previously been present. The fundamental, qualitative aspects were not subjects for scientific scrutiny. It is this omission that has given modern science and technics its power and that has also repressed humanity and destroyed the environment. Mumford views the work of Freud and his successors as attempts to rectify this omission. For Mumford the true significance of the Freudian contribution is to turn the power and clarity of science to the study of the inner life of man, and to reveal that man has the power to control himself (Mumford, 1951: 292).

As Mitcham and Mackey suggest, the key point of Mumford's analysis of the nature and development of modern technology is that it has arisen from a schism in the human personality (Mitcham and Mackey, 1972: 6). The separation of the will-to-power from the will-to-life has created two different

kinds of technics. This separation was the result of the breakdown of psychic balance in the mind of western society. Rather than a harmonious relationship between the id and the super-ego, one now finds the debased dictates of the id at the forefront of the modern mind, encouraged by a new utilitarian super-ego. This super-ego has been shaped by a mechanical ideology that prioritizes the mechanical and the exploitable over the organic. Though it serves its purpose well, that is, to extend and maintain the will-to-power, its neglect of all other concerns, such as the will-to-function or the will-to-life, has resulted in a breakdown in both society and the individual psyche. Unless one can mend this schism one cannot hope to correct the technics that have resulted from it. As Miller colourfully puts it, 'Before man can tame his technology he first has to tame himself, and the first step toward control is the defeat of the demons' (Miller, 1990: 159). The authoritarian character of much of modern technics is for Mumford but a reflection of the psyche that shaped it and operates it.

DEMYTHOLOGIZING THE MACHINE

It should also be noted that once we understand Mumford's purpose for his works on technology, we can see the genuine meaning of his proposed solution to the domination of the megamachine, a solution that has on occasion been derided for its apparent impotence or pessimism. Mumford's call for a reconstruction of human relations and the redirection of technical forces rests upon the belief that once the mechanical ideology that lies behind the modern megamachine has been exposed for what it is, and a more humane, life-centred idolum has been substituted for it, then modern technics will lose its political power. Williams criticizes Mumford for his naivety on this point. Although she agrees with his argument that the 'myth of the machine' – that mechanical quantitative systems are beneficial to human development and are superior to all other forms – is indeed empty she does not feel that the exploding of this myth will be sufficient. 'While the myths that justify the construction of authoritarian systems may be regarded as empty illusions, the systems themselves are quite real', she argues (Williams, 1994: 229).[23] She, and others, critique Mumford's solution to the problem of modern technics, portraying as idealistic and ineffective his assertion that 'each one of us . . . may play a part in extricating himself from the power system by asserting his primacy as a person in quiet acts of mental and physical withdrawal' (Mumford, 1970: 433).[24] However, to take this section of Mumford's work as summarizing his entire solution to the problem of monotechnical society is grossly to misrepresent his position. The modern megamachine was able to be constructed and employed by virtue of the mechanical idolum constructed by science and capitalism. Unless one

provides a counter-idolum, then all those who would reform modern technics are liable to perpetuate it. Due to the fact that they remained imbued with the mechanical ideology, they would but repeat its patterns (Mumford, 1970: 246–7). 'Before man can live a sane life he must escape his present ideological straitjackets' (Mumford, 1951: 23). Thus one must first withdraw from the mechanical idolum and conceive of a new idolum. 'We must create a new idolum: we must create a new super-ego: we must create a fresh plan of life' (Mumford, 1944: 413). And having then conceived it, humanity must live in it (ibid.: 71).[25]

Mumford's point is that even if inherently authoritarian technical systems or apparatus do exist, once the will or the social consent necessary for their operation has been removed, they can no longer exert any influence. One need not destroy oppressive technical systems once humanity has been civilized beyond the will to employ them. Furthermore, once one is aware of Mumford's concept of the idolum, as Williams does not appear to be, then one realizes that the construction and adoption of a new idolum is not an entirely intellectual affair with little influence on material reality. 'The reconstructed environment which all the genuine utopians seek to contrive is a reconstruction of both the physical world and the idolum' (Mumford, 1923: 22). To reconstruct the idolum is to reconstruct the physical environment. The 'quiet acts of withdrawal' that Williams critiques are not the end of the process of change, but the very beginning. One must withdraw to prepare for the conceptualization of a new idolum before it can be reified. 'Before art on any great scale can redress the distortions of our lop-sided technics, we must put ourselves in the mood and frame of mind in which art becomes possible, as either creation or re-creation: above all, we must learn to pause, to be silent, to close our eyes and wait' (Mumford, 1952: 157). The withdrawal is but the flexing of humanity's cognitive muscles in preparation for a leap forward.[26] In the construction of this new idolum, humanity will be obliged to confront the historic roots of the present crisis that have deflected its activities from the advancement of life (Mumford, 1970: 411). With the establishment of this idolum will come the establishment of a more humane super-ego, one that recognizes the need for an organic balance between all the parts of the psyche. With such a super-ego, the energies of the id will be sublimated towards appropriate objects, restoring and maintaining the equilibrium both within the psyche, and between the psyche and the idolum. 'The super-ego unites [man] with his historic social heritage, that is with the super-organic and ideal worlds he possesses in partnership with other men' (Mumford, 1951: 248–9). For Mumford a balanced attitude to humanity, technology and the environment arises only from a balanced psyche. The socio-technical macrocosm is a reflection of the psychic microcosm. Thus the psyche is the key to the reconstruction of everything else. As Mumford puts it 'man cannot save himself without first healing his split personality' (Mumford, 1946: 248).

Unless we can balance the collective psyche, Mumford argues, we cannot hope to balance our technics.

CONCLUSION

Lewis Mumford's views on human nature, the purpose of cultural history and the development of technology are all based upon a hybrid of his own concept of the idolum and Freudian psychoanalytic theory. There is also a Jungian influence on his work, although it is of a lesser degree. Mumford employs the Freudian model of the tripartite psyche which consists of the id, the ego and the super-ego. He rejects the Freudian concept of an innate death-drive, arguing that it is in fact socially conditioned rather than innate. He also modifies the id along Jungian lines and constructs a non-repressive concept of the role of the super-ego. His own model of the psyche is capable of the dynamic equilibrium that Mumford viewed as the optimum state for any organic entity. Introducing his own concept of the idolum, a socially constructed symbolic medium, Mumford connects the psyche to the collective historical mind of the human race and explains how the ego understands and acts upon the world, and how the world (as perceived and constructed through the idolum) acts upon the ego. Spurred by the biological drives of the id and the urgings of the super-ego to develop and give meaning to its existence, humanity utilizes the social idolum. In utilizing the idolum humanity both meets its needs and alters the environment. In changing the environment, humanity changes the idolum which in turn alters humanity's understanding of its world and its possibilities for action and fulfilment within it.

An awareness of the hitherto neglected psychological aspects of Mumford's work not only gives one a greater appreciation of the breadth of Mumford's knowledge and interests but also enables a better understanding of his overall position and outlook on the nature of technology and humanity. Indeed, in light of these findings we must reconsider standard interpretations of Mumford's technological theories. Mumford's historical studies must be understood as but an aspect of his psychological views, a means by which to realign the psyche and enable human development. According to Mumford the collective human psyche has failed to maintain a balance between its elements. In addition to this, it has adopted a mechanical idolum that is inimical to the balanced holism necessary for human flourishing. This idolum devalues the super-ego and permits the expression of only the most debased aspects of the id. Alterations of the environment in accordance with the mechanical idolum have led to the destruction of the environment, the collapse of social relations and the development of cities unfit for human habitation. Humanity must rediscover its collective past and locate the source

of its present psychic malaise. Having rebalanced its psyche humanity must then draw upon the positive patterns of life to be found in human history and attempt to construct a new idolum that is conducive to human development and psychic, social and environmental balance. Without the mechanical idolum, the contemporary megamachine, the socio-technical complex, can no longer function.

Mumford's conviction that the fundamental role in technological development was played by the psyche must lead to the reappraisal of received views on the meaning and purpose of his philosophy of technology. The primacy he accords to the human mind contradicts any attempts to characterize his philosophical position as a technological determinist one, or as one that argues for the autonomy of technological development.[27] In Mumford's eyes, to portray humanity as passive and impotent in the face of technological change would be to ignore the fundamental fact that the human psyche is the motive force of all such change. It is technology's point of origin, its means of continuation and, if it can be brought to order itself, its master.[28] The essential point of Mumford's philosophy of technology is that it is only when we lose control of ourselves that we appear to lose control of our technology. And conversely, Mumford believes, if we learn to balance our psyche, we will simultaneously resume conscious control of our technology. He assures us that 'nothing that man has created is outside his capacity to change, to remold, to supplant, or to destroy: his machines are no more sacred or substantial than the dreams in which they originated' (Mumford, 1944: 415). Thus, rather than pessimistically prophesying the inevitable triumph of the machine over the human spirit, Mumford's writings remain, if not optimistic, then at least quietly hopeful in the ability of humanity to reassert itself.

NOTES

I would like to thank the referees who made anonymous comments on this article and members of the Division of History and Philosophy of Science at the University of Leeds who commented on an earlier version that I presented at the divisional seminar. I would also like to thank Dr Anna Maria Ruggerini, Dr Michelle Swer and, in particular, Dr Gregory Radick, without whose support, encouragement and advice this article could not have been written.

1 Examples of commentators who argue for Mumford's (limited) Jungian influence include Leo Marx, Donald Miller, Charles Molesworth and Casey Blake.

2 Molesworth defines the idolum as 'the inner world and beliefs by which we negotiate and understand our experience of ourselves and the external world. Today we call this ideology . . .' (Molesworth, 1990: 244). As I will demonstrate below, while Molesworth's definition is essentially correct, there is far more to

Mumford's concept of the idolum than is captured by our contemporary understanding of the concept of 'ideology'.

3 Mumford is quite explicit about this, stating that 'Two forces have worked side by side in modern civilisation; and they have likewise operated side by side within science and technics themselves: one negates life, the other affirms it' (Mumford, 1946: 231).

4 A. A. Brill, the chief American spokesman for Freudian psychoanalysis, founded the New York Psychoanalytic Society in 1911 and opened the New York Psychoanalytic Institute in 1931, of which he was president (Kurzweil, 1998: 49, 52; Hale, 1971: 317). During the Second World War there was a considerable migration of European psychoanalysts to New York such that by the end of the war the number of psychoanalysts in New York had risen to four times the pre-war total (Kurzweil, 1998: 54).

5 Donald Miller has established that Mumford began to read British and American Freudians in 1920 in an attempt to fathom his self-perceived inadequacies as a lover, and diagnosed himself as suffering from a mother-fixation (Miller, 1989: 137).

6 In a letter to the sociologist and city planner Patrick Geddes, Mumford writes: 'Until psychoanalysis claimed the field we did not sufficiently realise the importance of the world-within; or, at any rate, we did not see that it had a directive function . . .' Cited in Molesworth (1990: 244).

7 Mumford writes: 'Freud's flashing originality as a psychologist was balanced by an uncritical mediocrity as a philosopher.' Mumford views Freud, through his assaults on the constraints of the super-ego, as partially responsible for the detrimental societal insurrection against it. Indeed, part of Mumford's motivation in writing his more psychological work may be assumed to be a desire to correct the 'essential pessimism' and 'active resentment against the historical role of culture' that he found in Freud's work (Mumford, 1944: 363).

8 Mumford states: 'The situation that mankind now faces collectively shows a certain resemblance to that faced by the individual in the midst of a neurosis. . . . The first step towards recognising his state and seeking help usually begins with a visible collapse, bodily or mental, often both' (Mumford, 1970: 410–11).

9 For details of Mumford's views on Freud's concept of the death-instinct and Mumford's own position on the relationship between death and technology see Swer (2003).

10 Everett Mendelsohn refers to this position of Mumford's as 'technological Malthusianism', the belief that 'mechanical inventions have been multiplied at a geometric ratio, compared with social skills and moral controls which have grown at only an arithmetic ratio, or . . . perhaps even regressed' (Mendelsohn, 1990: 347).

11 Collingwood held that to understand human history was to re-enact the thoughts of past historical agents, to put oneself in a position where one might view a previous historical world from their perspective. As Johnson puts it, 'In Collingwood's view, historical knowledge becomes more like a condition of human understanding than an explanation of the past. . . . What human beings share when they share a language or a thought is something that is grasped through their capacity to reconstruct each other's purposes. Historical thinking tells us as much

about how we understand each other as it does about how we understand the past' (Johnson, 1998: 80–1). Thus, 'Historical knowledge concerns how individuals and societies come to be what they are. It is not restricted to the remote past . . . but informs our contemporary sense of who we are' (ibid.: 80). The parallels between Collingwood's views and those of Mumford are quite apparent here.

12 Mumford writes that 'The unbaring of man's historic past during the last two centuries may well prove a more important contribution to man's survival than all his other scientific knowledge. This reclamation of human history will involve . . . absorbing into man's conscious existence the evils that, if unidentified and unrecognised, will otherwise continue to thwart him' (Mumford, 1970: 411).

13 Charles Molesworth has also noted the similarity between Mumford's concept of the idolum and Jung's collective unconscious (Molesworth, 1990: 254).

14 Casey Blake makes a similar point about the role of history in Mumford's work, although without my emphasis on its Freudian character. He states: 'History, in [Mumford's] view, was "usable" insofar as it allowed citizens to reflect on the past conditions that shaped their experience, and to grasp the potential for change that lay within themselves and their society' (Blake, 1990: 284–5). Miller also makes this point (Miller, 1989: 527–8). Frank G. Novak attributes Mumford's concept of the usable past to the influence of the literary critic Van Wyck Brooks (Novak, 1988: 54–5).

15 Freud writes that 'it may be said of the id that it is totally non-moral, of the ego that it strives to be moral, and of the super-ego that it can be super-moral and then become as cruel as only the id can be' (Freud, 1961: 54).

16 Freud argues for the existence of 'a death-instinct, the task of which is to lead organic life back into the inanimate state' (Freud, 1961: 40).

17 For a succinct account of the influence of Lamarckian theory on Freud's psychoanalytic views see Sulloway (1992: 274–5).

18 Miller has argued that Mumford was significantly influenced by the neo-Lamarckian theory of evolution, which denies that natural selection is the primary operative factor in the evolutionary process (Miller, 1989: 68–9). This would also explain Mumford's reformation of the Freudian id.

19 Mumford's modification of the Freudian libido may also stem from the influence of Bergson, whose ideas had been in vogue before the advent of Freudianism in the United States. Hale observes that the Bergsonian concept of a beneficent life-force was frequently used to replace the strictly Freudian definition of the libido in America (Hale, 1971: 342–3).

20 Redefining the Freudian concept of the super-ego to stress its more positive aspects was not uncommon in American Freudianism. Hale points out that several of the leading American Freudians believed that the super-ego demonstrated that morality was an essential part of the human personality (Hale, 1978: 309).

21 Robert Casillo traces this idea that 'the self and society are fundamentally psychic constructs' and that 'society's organic bonds are . . . analysable . . . in observable psychic and symbolic interactions and the shared values arising from them' to the influence of the American sociologist Charles Horton Cooley (Casillo, 1992: 99–100).

22 Leo Marx makes the intriguing suggestion that the megamachine operates for Mumford as a form of Jungian archetype (Marx, 1990: 178). Marx then criticizes

Mumford for not adequately explaining how this archetype was transmitted from the minds of the ancient Egyptians to the originators of the modern megamachine. If, as Marx suggests, Mumford's conception of the megamachine is that of a Jungian archetype reified, then its existence in the collective unconscious of humanity would seem to explain its method of transferral through time to the present day.

23 Casillo asks how one is to physically withdraw from the megamachine when there is now nowhere left where the megamachine is not present (Casillo, 1992: 115).

24 See also Zuckerman, 1990.

25 Michael Zuckerman suggests an additional motivation for Mumford's advocacy of withdrawal and self-renewal as revolution. He writes: 'Mumford means to avoid clashes which cannot be won. He assumes . . . that the power complex cannot be conquered by a direct confrontation. He knows that such an assault would be a battle fought on the megamachine's terrain by the megamachine's rules, a battle against vastly superior forces. He conjures a rising that does not depend on physical weapons just because such a rising cannot be quelled with physical weapons' (Zuckerman, 1990: 375).

26 Miller attributes Mumford's belief in the ability of humanity to make this psychosocial 'leap' to the influence of his mentor, Patrick Geddes. Geddes argued that organisms do not passively adapt themselves to environmental influences, but strive to change both themselves and their environment. Geddes calls this capacity of an organism to overcome its environmental conditioning *insurgency* (Miller, 1989: 69–70). Alternatively, Eugene Rochberg-Halton attributes this belief to the influence to Charles Peirce and his concept of *abduction*, the capacity 'to create wholly new premises for human existence . . . the bodying forth and incarnation of new ideas in fruitful modes of conduct . . . rooted in our biocosmic nature' (Rochberg-Halton, 1990: 132).

27 Examples of those who have characterized Mumford as a technological determinist include Ropohl (1983), and Florman (1976). Florman even goes so far as to label Mumford an 'antitechnologist'.

28 Zuckerman captures the spirit of Mumford's position when he states that for Mumford, 'Mind remains primary. Mind – more exactly, mind in history – was ingredient in the emergence of the megamachine and will ultimately be equally ingredient in its demise' (Zuckerman, 1990: 373).

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