

# Unconscious Mental Factors in HIV Infection

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## Abstract

Multiple drug resistant strains of HIV and continuing difficulties with vaccine development highlight the importance of psychological interventions which aim to influence the psychosocial and emotional factors empirically demonstrated to be significant predictors of immunity, illness progression and AIDS mortality in seropositive persons. Such data have profound implications for psychological interventions designed to modify psychosocial factors predictive of enhanced risk of exposure to HIV as well as the neuroendocrine and immune mechanisms mediating the impact of such factors on disease progression. Many of these factors can be construed as unconscious mental ones, and psychoanalytic self-psychology may be a useful framework for conceptualizing psychic and immune defence as well as bodily and self-integration in HIV infection. Although further prospective studies and cross-cultural validation of research are necessary, existing data suggest that psychoanalytic insights may be useful both in therapeutic interventions and evaluative research which would require an underlying epistemology of the complementarity of mind and matter.

## 1. Introduction

Kuhnian anomalies suggest the need for a paradigm shift in the scientific understanding and treatment of HIV/AIDS. This may involve a move beyond the traditional medical model, and towards a multifactorial, ecological or holistic framework which highlights the potential efficacy of psychological interventions. The anomalies in the current paradigm include multiple drug resistance to HIV, resulting in potentially serious limits to a purely pharmacological approach to treatment with antiretroviral drugs. Rambaut *et al.* (2004) commented that the evolutionary significance of HIV and mutation was underestimated by those who proposed that highly active antiretroviral therapy represented a cure for AIDS. Commenting upon the marked genetic variability exhibited within individual hosts, these authors referred to HIV as “one of the fastest evolving of all organisms” (Rambaut *et al.* 2004, p. 56).

Mathematical modelling which had predicted the eradication of virus from patients within two or three years has not been fulfilled. Kovalevsky

*et al.* (2006) observed that one of the most disturbing events in attempts to counter HIV infection has been the emergence of mutations that conferred resistance to all 20 FDA approved antiretroviral drugs then being used clinically. Further anomalies include the almost insuperable difficulties with vaccine development due to mutation reported by Ho (2005) and, most recently, evidence of increased risk of seroconversion in one clinical trial reported by Kresge (2007). Alternative biomedical approaches to scientific understanding include the work of Davis (2006) and his colleagues, exploring the immune synapse and how HIV hijacks cellular communication networks to propel itself from one cell to another, and the research of McFadden and Al-Khalili (1999) in developing a quantum mechanical model of adaptive or “directed” mutation.

This is particularly relevant to mutant strains of tuberculosis, which in conjunction with HIV seropositive status constitutes a threat to the lives of millions of people, especially in the developing world. It is in the context of such anomalies in classical biomedical research that prioritizing empirical studies into psychoneuroimmunological aspects of HIV/AIDS and evaluating psychological interventions may need to be re-assessed and the limitations of pharmacology recognized (Todd 2008). Such paradigm shifts imply the need to challenge the reductionist materialist epistemology which has characterized Western science, including medicine, for more than 300 years.

## **2. Self-Psychology, Mind-Matter Anomalies, and HIV**

Psychoanalytic self-psychology as outlined by psychoanalysts such as Winnicott (1971), Kohut (1977) and Fordham (1985) provides a theoretical framework for conceptualizing both a complementarity of psychic and immune defence and the loss of bodily and self-integration in HIV infection. In an evolutionary framework, the emergence of HIV is particularly significant as the retrovirus poses a threat to self-continuity on both biological and psychological levels simultaneously while disguising itself so that it is not recognized and eliminated as a “not self” pathogen by the immune system.

Schrödinger’s (1992) thesis that the so-called “arrow of time” does not necessarily deal a mortal blow to its creator is reminiscent of the concept of timeless dimensions of the self and of the unconscious in psychoanalysis, manifest, for instance, in dream content and archetypal symbols. Such ideas challenge classic, mechanistic concepts of causality insofar as these have been entangled with an apparently unbreakable spatiotemporal hold and an epistemology of metaphysical materialism. Within the framework of Jungian depth psychology, however, collective denial of the destructive shadow of HIV, especially in the developing world could be construed as a symptom of a spiritual malaise in the developed world.

These notions, however, are not only consistent with the concepts of timelessness and meaningful coincidence in psychoanalysis. They are also implicitly spiritual, with intimations of a numinous dimension of the evolutionary process in which humanity participates. This includes the idea that an evolving God becomes conscious through and is completed by humankind in a process theology which regards the numinous as being both immanent and transcendent.

Atmanspacher (2007, p. 133) has noted contributions to spirituality which involve concepts of mind which “transcend the individual in a transpersonal sense” so that near-death experiences may become subjects for scientific study. Perhaps diseases in which unconscious mental phenomena are demonstrably predictive of outcome and mortality could be regarded usefully as examples of such “anomalies”. Unconscious defences, negative emotions, denied and split off parts of the self, which the Jungian analyst Fordham (1985) has referred to as “de-integrates” and the awakening of a sense of meaning in confronting mortality have already been implicated in psychoneuroimmunological research as predictors of immunity and disease progression in HIV seropositive persons.

Psychological interventions and evaluative research may be enriched by such insights, particularly those concerning the significance of unconscious psychosocial factors to immunity and disease progression. As I shall argue further, an unconscious investment in a materialist epistemology of science remains a source of resistance to such insights as well as psychoanalysis with its therapeutic aims of self-transformation and making the unconscious conscious. Such an investment is also inimical both to concepts of spirituality and conceptualizing disease psychosomatically in a new “enlightenment” in which science and religion are re-integrated, as complementary rather than antagonistic perspectives..

The banishment of anything personal, including psyche and consciousness, from classical mechanistic science, could be construed as a one-sided development so that recognizing a complementarity of mind and matter as well as a numinous dimension of evolutionary becoming would represent the restoration of a lost wholeness. A dual-aspect notion of reality would replace monist reductionism in either a materialistic or an idealistic form. Schrödinger (1992) had noted that nothing personal, including numinosity, would be found subsequent to its strangulation by the spatiotemporal hold, itself a construct of creative mind. In this meaningful connection, HIV might be construed as a retroviral messenger delivering a figurative summons to humanity to recognize a metaphorical entanglement between the developed and developing worlds with a geopolitical holism which transcends the confines of nationalism in collectively responding to a truly global, evolutionary challenge. Such a response would imply a spiritual transformation in the collective consciousness of humanity.

### 3. The Unconscious and Prevention

Psychological interventions aim to facilitate the modification of personality, stress, emotional and behavioral factors which enhance the probability of exposure to HIV as well as immunosuppression and disease progression once infection has occurred. In conjunction with education programs and biomedical measures demonstrated by empirical evidence to reduce the risk of infection, such measures fall into the domain of primary prevention. The assumption that simply providing information about behaviors resulting in a high risk of exposure to HIV is a sufficient primary prevention measure has been known to be flawed since the early 1980's (McKusick 1983, Todd 1992). Nevertheless, the errors which have historically characterized attempts to modify behavior patterns related to cancer and heart disease keep being repeated (Todd and Magarey 1978). The often complex and unconscious motivations of such high-risk behaviors must also be taken into account. Similar considerations apply to behavioral and lifestyle factors such as substance misuse which are likely to impact upon immunity and disease progression once infection has occurred.

Evidence-based psychological interventions are potentially highly relevant to immunosuppression (and enhancement) as well as disease progression in persons who are already seropositive to HIV (Solomon 1987, Solomon *et al.* 1991, Todd 1992, Cole and Kemeny 2001, Kiecolt-Glaser *et al.* 2002a). Empirical data concerning these issues fall into the domain of secondary prevention and much of the research on psychoneuroimmunological aspects of HIV/AIDS concerns quantified psychosocial factors predictive of immunity and disease outcome. Psychoanalysis can provide a good explanatory fit for such data, as Todd and Magarey (1978) suggested in an empirical study of psychosocial aspects of breast cancer in which psychoanalytic concepts including ego-defences and unconscious affects were subject to rigorous operational analysis and measurement. Defensive denial and depression were especially salient predictors of delayed presentation for diagnosis in a context of potential object loss.

In the remainder of this paper I shall review empirical studies relevant to both primary and secondary prevention as well as the implications for psychological interventions in considerable detail, with various perspectives upon the so-called "psychophysical problem" elucidated. Historically, many studies have evaluated the relevance of one or few psychosocial factors instead of exploring the possible predictive significance of multiple variables with respect to immunity, illness outcome and AIDS mortality.

### 4. The Psychophysical Problem and HIV

One conceptual obstacle to the acceptance of psychoneuroimmunological research into HIV/AIDS has been a perhaps unconscious, narcissistic investment in a materialist epistemology of science which banished

spirit from matter. Consciousness and mental processes (including unconscious ones) have often been viewed as epiphenomenal and causally inefficacious by-products of events in the brain. Such a position either denies causal significance to psychological factors or regards mentalistic terms as a linguistic shorthand for the description of neurophysiological processes. Historically, this has been one influential solution to the so-called “psychophysical” or mind-matter problem, providing an epistemological foundation for conceptualizing disease exclusively within a classical, mechanistic medical model from which considerations of the mental were intentionally excluded, partly due to the received wisdom of a positivist philosophy of science.

On empirical grounds, HIV can be construed as contributing to certain “mind-matter anomalies” (Atmanspacher 2007). Examples to be considered are the demonstrated correlations between measured unconscious psychological factors influencing disease progression and AIDS mortality via the neuroendocrine and immune systems which maintain bodily as well as psychic self-integration and continuity. A relationship of complementarity between psychic and immune defence would be a particularly interesting case of a complementarity of mind and matter. In this meaningful connection, HIV is destructive not only to the immune system, but also to the brain, causing AIDS dementia complex in seropositive persons, while being a threat to psychic and immunological self-integration and survival. Psychosocial HIV research might thus be viewed as constituting one possible model in the exploration of mind-matter anomalies with significant epistemological as well as pragmatic treatment implications.

The contributions of such neuroscientists as Eccles (see Popper and Eccles 1990) and Pribram (2004) have challenged materialism, concluding that Popper’s “three worlds” of brain, culture and mind (Popper and Eccles 1990) are indispensably necessary for the achievement of consciousness. The three worlds interact in a feedback loop, so that consciousness or mind program the brain to evolve culture which in turn stimulates mental development. Pribram’s position was “hostile” to an eliminative materialist approach, an attitude expressed pithily in his remark that “the more reflex the reflex, the less does mind accompany it” (Pribram 2004, p. 21). Rather, mind and matter have a common ontological foundation which transcends spacetime.

Pribram rejects the idea that consciousness is an epiphenomenal by-product of brain processes, noting that it is a psychological process, mathematics, which describes mind-matter relationships. On his account, the cultural world is spiritual insofar as conscious experience is drawn to “informational patterns” which transcend humankind’s immediate daily concerns. Results and ideas of quantum physics, neuroscience, depth psychology and religious belief systems may awaken a phenomenological sense of transpersonal meaning.

However, even sophisticated brain imaging techniques such as fMRI do not permit the prediction of the phenomenological content of consciousness. The brain process, as Pribram points out, does not look like what we are experiencing mentally in consciousness, whether reflecting upon patients' fantasies and symbolic dream content about HIV or the global challenge created for humanity. Similarly, such neuropsychanalysts as Turnbull and Solms (2007) have argued that neural reductionism can only be seriously challenged by demonstrating that subjective experience (including unconscious mental processes) generates robust and useful scientific predictions, including those relevant to understanding the outcome of HIV infection.

Heelan's (2004) argument for research into the "quantum structure of the kind of physical embodiment that makes consciousness and cognition possible" utilizes the concepts of complementarity and entanglement. Acknowledging his debt to the philosopher Husserl and more recent thinkers, including Primas and Pribram, Heelan's thesis is that, on phenomenological grounds, consciousness possesses a structure isomorphic with or analogous to quantum mechanics (Heelan 2004, p. 81). Phenomenology, in Heelan's framework, is to be regarded as a tool for exploring mind and matter. This is central to psychoanalytically oriented research and therapies, as Todd and Magarey (1978) have pointed out in eliciting data about subjective states and meanings as well as unconscious ego-defences and affects in women with symptoms of breast cancer.

The treatment of the psychophysical problem by the depth psychologist Jung and the physicist Pauli with their notion of the archetypes as timeless, cosmic ordering and regulating principles creating a bridge between mind and matter in a relationship of complementarity, corresponds to the notion of active information, fulfilling this function in the dual-aspect position adopted by Bohm (2002) or Hiley and Pylykänen (2005). Whatever position one may prefer concerning the psychophysical problem, it will inevitably exert an overt or covert influence on the funding and conduct of psychosomatic or psychoneuroimmunological research into such illnesses as cancer and HIV/AIDS.

## 5. Foundations of Psychoneuroimmunological Research

The eminent scientist and pioneer Solomon is credited with coining the term "psychoimmunology" in 1964. Solomon and Engel (1977), who had called for a revolution in medicine, had seriously challenged the Jenner-Pasteur model of infectious disease as well as traditional medical model concepts of such immunologically mediated and resisted illnesses as cancer and autoimmune disorders. Early correlational studies beginning in the 1930's on the basis of largely psychoanalytic hypotheses into the impact

of repressed conflicts in “object relations” or attachments, loss, depression and inward-turning anger as well as the symbolic meanings of specific organ systems (such as the breast) had laid the foundations for psychosomatic research which, however, did not permit causal inferences to be made on the basis of data collected (Menninger 1938, Grinker 1973). The possible causal significance of unconscious defences, intrapsychic conflicts and emotions could be assessed only when the biological mechanisms mediating the impact of such variables on disease onset and outcome could be elucidated and quantified.

Psychoneuroimmunology was born when both immunological and neuroendocrine pathways were identified and became susceptible to empirical measurement. A landmark study was that of Bartrop *et al.* (1977), an Australian physician who demonstrated depression of T lymphocytes after bereavement, a finding replicated by Schleifer *et al.* (1983). Higher mortality rates in partners within six months of bereavement were observed.

The explanatory theoretical framework provided by the psychoanalyst Bowlby (1989), in his work on *Attachment and Loss*, has been a useful source of hypotheses about the impact of bereavement and separation (or object loss) upon immunity and illness including HIV/AIDS. Bereavement resulting in guilt and self-reproach is not only emotionally toxic, but deleterious to the prognosis of HIV seropositive persons as I shall point out in discussing data on psychosocial factors as predictors of HIV progression and AIDS mortality. As I have already intimated, HIV represents a threat to self-continuity with respect to immunological and psychic defence systems. Not only does the retrovirus disguise itself from the immune system so that it is not eliminated as a “not-self” pathogen, one of its primary modes of transmission utilizes the sexuality which ensures the continuity, biological identity and immortality of the human species. The evolutionary significance of HIV encompasses mind, matter and culture in a genuinely transpersonal meaning.

Solomon (1987), Ader *et al.* (1991), and Todd (1992) have provided detailed reviews of the nature and history of psychoneuroimmunology, including early studies of HIV/AIDS within this conceptual framework. Specifically, empirical research on psychosocial factors as predictors of behavior patterns associated with the risk of infection with HIV, immune status and the onset of AIDS spectrum disorders in seropositive individuals were reviewed. I shall now turn to the psychosocial factors demonstrated to be predictors of immunosuppression, illness progression and AIDS mortality. Such evidence exemplifies the application of a dual-aspect solution of the psychophysical problem to a multifactorial understanding of illnesses, including HIV/AIDS. Unconscious psychosocial factors have demonstrated significance for secondary prevention, that is to say, to influencing immunity, illness and AIDS related mortality even sub-

sequent to the introduction and use of antiretroviral drugs, especially in the developed world.

## 6. Psychosocial Predictors of HIV Progression

Hypotheses about psychosocial factors likely to be relevant to the onset and progression of HIV/AIDS were deduced initially from research studies of the role of factors in other immunologically mediated and resisted diseases including cancer, autoimmune disorders and infections such as Epstein-Barr, cytomegalovirus and herpes simplex. This work had been published in such sources as the volume of Ader *et al.* (1991) on psychoneuroimmunology. Viral causation of certain cancers had been considered probable even prior to the onset of the HIV/AIDS pandemic during the early 1980's. Solomon (1987) and other members of the Biopsychosocial AIDS Project at the University of California, San Francisco (including Todd (1986, 1992)) formulated hypotheses about psychosocial factors as predictors of immunity and illness progression as well as the role of such factors as determinants of behavior patterns resulting in a high risk of exposure to HIV.

Solomon (1987) reported the results of pilot studies in the United States. Summed up briefly, the early hypotheses concerned the possible significance of such psychosocial factors are (a) coping and defence mechanisms, (b) loss of significant persons through bereavement or separation, (c) depression manifest as hopeless/helpless reactions to trauma and threat, as distinct from grief, (d) integration or acceptance of sexual identity, (e) inward-turning or suppressed anger, (f) social support, and (g) resilience associated with a sense of meaning in life. Psychoanalytically oriented studies (Todd and Magarey 1978) were a significant source of these hypotheses.

The pilot studies and early research reported by Solomon (1987, 1991) and Todd and Burcham (1986) provided some significant data in support of these hypotheses. However, the need for prospective, longitudinal studies and controlling for possible confounding factors such as substance misuse and for optimizing statistical power with larger sample sizes was noted as an important direction for future research as well as more rigorous hypothesis testing (Solomon 1991, Todd, 1992, Cole and Kemeny 2001). Extensive reviews of studies on psychosocial determinants of immune status and the progression of HIV infection since 1991 have been provided by Cole and Kemeny (2001) and Kiecolt-Glaser *et al.* (2002a).

Analyses focussing upon reactions to highly traumatic and personally salient events such as diagnosis of HIV seropositive status and bereavement have identified relationships with both immunological and clinical indices of HIV progression. Kemeny *et al.* (1994) found that measures of



grief uncomplicated by depression predicted reductions in immune function over a two-to-three-year period in a group of seropositive homosexual men. This finding was replicated by Kemeny *et al.* (1995) in which guilt and self-reproach or blame as an aspect of grief following bereavement predicted CD4+T cell declines during an 18 month period.

However, other research indicated that actively confronting such traumas as bereavement or the threat of mortality and finding a sense of meaning could mitigate immunosuppression and mortality. For instance, Bower *et al.* (1998) found that those who discovered meaning experienced a slower decline in CD4+T cell levels over two to three years and had an enhanced survival time during four to nine years. Such data support the notion that a sense of meaning and spirituality have important health implications in the populations studied (Todd 1992, 2008).

Defensive denial of seropositive status (Ironson *et al.* 1994) and shame-based concealment of homosexual identity were associated with immunosuppression and heightened risk of progression to AIDS during a two year follow up. These findings confirmed those of the earlier studies which had demonstrated significant associations between high-risk sexual behavior, immunosuppression and disease progression while linking acceptance of sexual identity with a lower probability of exposure to HIV and a more favorable prognosis. This is a matter of serious concern for health professionals working in the HIV/AIDS field (Todd 1992).

Cole *et al.* (1996, 1997) investigated concealment of homosexual identity as a model of what they termed "psychological inhibition", finding accelerated times to a critically low CD4+T cell level as well as AIDS onset and mortality among so-called "closeted" members of a sample of initially healthy homosexual men followed up for a period of nine years. These closeted individuals were assessed as particularly sensitive to perceived social rejection, this factor being an even stronger predictor of HIV disease progression than concealment per se. Such data seem to fit well with the notion of internalized homophobia, associated with shame and self-hatred resulting in both concealment and, perhaps through such defence mechanisms as denial, splitting and projection, observed hypersensitivity to rejection by others. Psychoanalysis may be particularly well suited to the working through of such defensive and affective processes while perhaps promoting self-integration, inner transformation and the awakening of a sense of transpersonal purpose in confronting mortality and loss in HIV seropositive persons generally.

The factors which can be considered to be potential foci for psychological interventions include: (a) depression, (b) bereavement, (c) grieving responses to bereavement such as guilt and self-reproach (identified by Freud (1917) in his paper on "mourning and melancholia" as repressed feelings towards the deceased), (d) sustained denial of traumatic realities such as seropositive status, bereavement and mortality, (e) stigma and

shame associated with sexuality, (f) a sense of meaning or transpersonal purpose in life in the face of the threat of self-disintegration and mortality. Psychoanalytic theories, especially those of Jung, Kohut and Winnicott would permit a more profound understanding of the role of unconscious defences and negative emotions, factors known to be linked with immunosuppression and hence to loss of bodily and self-integration as well as providing frameworks for evaluating spiritual transformation.

## 7. Mindful Interventions

Kiecolt-Glaser *et al.* (2002b) have provided a review of psychoneuroimmunological studies relevant to the understanding and treatment of cancer and autoimmune disease as well as HIV/AIDS. With respect to HIV, the authors paid specific attention to the potential benefit of psychological interventions as diverse as hypnosis, cognitive behavior therapy, self-disclosure and existential approaches concerned with the quest for meaning in confronting such highly traumatic events as bereavement and mortality. In general terms they noted that the narrower the scope of a behavioral intervention and the shorter its time course, the smaller and less enduring would be its impact either psychologically or immunologically. Longer follow-up periods would be desirable in future evaluative research.

Such research, therefore, might be enriched through the application of insights from psychoanalytic self-psychology, including the notions of defence and self-integration, in longer term therapeutic approaches including groups, particularly given the apparent complementarity between psychic and immune defence in maintaining integrity, self-continuity and biological survival. Similarly, several randomized clinical trials had suggested that psychological interventions addressed, for instance, to bereavement, grief and shame may influence indices of disease progression (Cole and Kemeny 2001).

While Kiecolt-Glaser *et al.* (2002b) observed that intervention work with HIV seropositive persons had produced some “promising results”, this conclusion appears to have been based as much upon the mounting evidence that psychosocial factors are significant predictors of behavior exposing people to HIV infection and both immunity and disease progression, as the results of well controlled intervention studies. Future research would need to establish more empirical evidence for psychological interventions as well as clarifying those with greater efficacy in reducing morbidity and mortality in evaluation studies. Specifically, studies focussing upon the effects of self-transformation and the awakening of meaning upon immunity and disease outcome might be a fruitful direction for research which addresses both the unconscious and the self in its personal and archetypal or transpersonal aspects.

## 8. Conclusions

In conclusion it may be useful to highlight the need for sophisticated studies of multiple variables in psychosomatic research, permitting the use of such multivariate techniques as hierarchical logistic regression and discriminant function analyses, unresolved methodological issues and future directions for research. The need for further prospective, longitudinal studies and controlling for such confounding variables as substance misuse and stage of illness at the commencement of research, with the larger sample sizes necessary to optimize statistical power than those in cross-sectional and pilot work has been noted as important for more rigorous hypothesis testing and the provision of a solid evidence basis for psychological interventions (Solomon *et al.* 1991, Todd 1992, Cole and Kemeny 2001). The simultaneous analysis of psychosocial factors, biological mediators (neuroendocrine and immune) and HIV disease progression remain important questions for research.

Well designed evaluation studies could be vital to creating an empirically solid case for properly funded psychological intervention programs, independently of antiretroviral drug treatment. Cross-cultural validation of research conducted in the developed world to developing nations would permit generalization of results, given that HIV/AIDS is a globally salient, human issue affecting millions of people, including children. How the relationship between mind and matter is conceptualized is likely to be a determinant of scientific and medical as well as societal attitudes and research into such diseases. HIV/AIDS as a psychosomatic phenomenon might be considered to be one “mind-matter anomaly” the study of which might help to elucidate this relationship. Psychosocial and spiritual factors are relevant not only to mental health in seropositive persons, but also to treatment and disease outcome (Todd 2008).

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