The 'Werther Effect' Fact or Fantasy?

Media Contagion and Suicide in the Internet Age:
Critical evaluation, theoretical reconceptualisation and empirical investigation

DPhil Research Thesis by Paul Marsden - July 2000

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I hereby declare that this thesis has not been submitted, either in the same or different form, to this or any other University for a degree.

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The Werther Effect: Fact or Fantasy?

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Summary

This project explores a controversial idea known as the Werther Effect. The Werther Effect suggests that media representations of suicide may have some influence on the suicide of those exposed to them such that suicide becomes more likely. The report begins with a conceptual clarification of this idea of media suicide contagion and then explores the empirical plausibility of the putative phenomenon through a critical review of relevant research evidence. It is argued that in addition to methodological problems, the absence of any theory to guide research and interpret data has rendered findings less than compelling. A theoretical model of the Werther Effect is therefore developed through a conceptual integration of aspects of social cognition theory, framing theory and meme theory. The socio-cognitive model presented here is based on the possible action of priming and modelling mechanisms in the bounding of meaning and decisions. Two empirical studies illustrate indirectly how these mechanisms might allow media representations to inform suicide choice. A third study seeks to operationalise investigation more directly, and does so by developing a new online grounded research tool that generates structured insight into the meaning of suicide for particular groups in the form of memetic networks. A popular suicide representation available over the Internet, the suicide note of Kurt Cobain of the rock group Nirvana, is then negatively framed by using the 'social mindscapes' of suicide that are outputted by these memetic networks. A novel use of Internet 'frames technology' allows for a web-based study to investigate any influence of the framed and non-framed versions of the suicide note to proceed without incurring any increased risk of contagion for participants. In conclusion, it is argued that this study provides both theoretical and empirical reasons to suggest that media representations of suicide could have some influence on a person's suicidality.

Table of Contents

Appendix: Software Code for the Social Mindscape Generator and Online Stimulus Material245

Table of Figures

Preface

As one might suspect could be the case for many graduate research students, the submission of a project that has dominated one's life for four years is done with a peculiar mélange of feelings involving both a sense of achievement and, despite any reassurances, trepidation. Will the ideas developed in this project be considered a useful contribution and inform future research and thinking?

If the ideas in this project are fit for survival, then this is in no small part due to the support of a number of people, most notably Sue Blackmore and Peter Dickens who have acted as advisor and supervisor to the project. Both have provided useful advice and commentary over the structure and content of the report, whilst the opportunity, made possible by Sue Blackmore, to speak at the 1999 Edinburgh science festival about this project allowed for useful feedback on the ideas presented in the report. Regular meetings with the informal group of academics known as "Meme Lab" have also provided help and advice in the development of my thinking.

Thanks are also due to the Graduate Research Centre in the Social Sciences at Sussex University for sponsoring the presentation of a paper based on this project at a conference on models of information transmission in Namur, Belgium in 1998. Much useful feedback was provided by peers at this conference, especially from Johan Bollen, now working for the US government on adaptive networks. Other useful feedback has been provided by the numerous but anonymous peer reviewers for papers published over the last four years that track the development of this project.

1.0 Introduction

> *'In fact we shall see in one of the following chapters that suicide is very contagious'*
>
> *(E. Durkheim 1970 [1897]: 96)*

During the mid-1770s a peculiar clothing fashion swept across Europe. For no immediately apparent reason, young men started dressing in yellow trousers, blue jackets and open-necked shirts. This mildly eccentric fashion seemed to spread from region to region in a manner strangely similar to an epidemic of contagious disease. What was particularly curious about the spread of this fad was the fact that the young 18th Century fashion victims appeared to have had no direct contact with each other; pockets of this contagious fashion appeared to spring up independently in the most isolated regions. Only some time later was the vector of the contagion identified; - the first novel of Johan Wolfgang von Goethe, *The Sorrows of Young Werther*.

Goethe's tale recounted the desperate plight of Werther, a young man hopelessly in love with a happily married woman called Charlotte. In this intense and romantic story, Goethe described in detail the hero's rather peculiar penchant for wearing a colourful mélange of blue jackets, yellow trousers and open-necked shirts. The mystery of the peculiar fashion contagion was resolved as what became known as 'Werther Dress' spread across Europe.

Not long after its publication in 1774, *The Sorrows of Young Werther* was banned in a number of areas in Europe, including Leipzig, Copenhagen and Milan. The ban was imposed not because certain authorities held it to be

responsible for the spread of a fashion of rather doubtful taste, but because of signs that the book was also the vector for an altogether more serious contagion. Anecdotal evidence suggested that it was not only Werther's dress code that was apparently infectious, but so too was his behaviour. The novel recounted how Werther's clumsy, but painfully sincere, attempts at winning Charlotte's heart had ultimately failed. Destroyed by rejection, Werther saw no way out of his desperate plight other than suicide, and using a pistol, he dramatically put an end to his sorrows.

As authorities around Europe began receiving reports of a sudden increase in young male suicides, many attributed the increase to Goethe's novel. Goethe, who had written the novel to purge himself of his own suicidal impulses, became convinced that his tale was responsible for a continental wave of suicides.

> *'My friends were confusing themselves by believing that they had to turn poetry into reality, enact the novel and shoot themselves! What actually took place now among a few, happened later en masse…' (Goethe 1962: 147)*

As a consequence of this reported epidemic of imitative suicides, *The Sorrows of Young Werther* was banned in an effort to halt what was dubbed, two centuries later by sociologist David Phillips, **The Werther Effect** (Phillips 1974), that is, media-induced imitative suicides.

A decade before Phillips coined the term the 'Werther Effect' to describe this peculiar suicide contagion, the phenomenon of suicide was virtually unheard of on the small densely populated island of Ebeye in the Micronesian archipelago of the South Pacific. Between 1955 and 1965 not one suicide had

been recorded or could be recollected. However, in 1967 the son of one of the wealthiest families on the island committed suicide. His brother explained what had happened

> *'R was involved with two ladies. They were both the same age, and they both had a one-month-old daughter by R. R went back and forth between the two of them. He hanged himself because he couldn't make up his mind, and he had just quarrelled with one of them. When he was buried, both ladies cried on his grave, and they both fainted. They had heard rumours about each other, but they only learned about each other at R's funeral.'* (Rubinstein 1983: 663)

Stories of this 'lover's dilemma' and the desperate suicide solution adopted spread across the island by word of mouth. The island's medical expert reported that boys would dream that R was calling for them to kill themselves. Just three days after the suicide, a 22 year-old man having similar relationship problems to R did just that. In the next decade the small six thousand island population experienced twenty more suicides. Many of these suicides bore an uncanny resemblance to the first initial suicide story, including the case of young man who committed suicide after scrawling graffiti on a wall that bade farewell to his two girlfriends in a very public manner (Rubinstein 1983).

The Micronesian suicide problem was not isolated solely to the small island of Ebeye. At the beginning of the 1960s, Micronesia had one of the lowest suicide rates in the world with an annual suicide rate (incidence per 100 000) of 6.4 for men and 0 for women. This compared to a rate of 13.8 for men and 8.7 for women in the same year for England and Wales. Over the next twenty years, suicide spread across the archipelago dramatically increasing the suicide rate for men by 1000%. Certain islands came to have a suicide rate

for young men between the age of 15 and 34 more than 30 times higher than that of the U.K. Overall, Micronesia went from having one of the lowest suicide rates in the world to having the highest recorded number of suicides per capita on the planet. In a pattern that resembled the 'Werther' incident in Europe, the suicides appeared to follow a deadly script that was played out by teenagers who were usually still at high school. After going out drinking with friends on a weekend night, often following an apparently trivial disagreement with parents, adolescents would find a rope, tie the end to a door knob or low branch, form a noose, place it around their neck and then lean forward until asphyxiation and death. It was as if exposure to suicide stories not only somehow influenced decisions to commit suicide, but also how to do it.

This project is about the putative phenomenon of 'media suicide contagion', the idea that suicide stories can beget suicide, or more properly, that *media exposure to suicide through symbolic representations of suicide can influence suicidality such that suicide becomes more likely*. The focus of this project will be the theoretical and empirical plausibility of this idea. Specifically, the project will concentrate on the controversial idea that exposure to media representations of suicide can increase the likelihood of suicide in its various manifestations. In other words, the report will investigate what are sometimes called media-induced 'copycat' or 'imitative' suicides. Put differently again, the question to which this report will address itself is whether it makes sense to understand exposure to media representations as having a role of influence in the production of suicide? Or, as critics have suggested, are stories of media influence in suicide simply part of an illusory moral panic serving the vested

interests of certain 'experts' and those with a desire to curtail media freedom? In sum, was the sociologist Durkheim correct to say 'no fact is more readily transmissible by contagion than suicide' (Durkheim 1970 [1897]: 141-2) or are empirical examples of suicide contagion better explained in terms of other processes of influence in which exposure to representation of suicide play no part?

1.1 Social Research, Sociology or Social Psychology?

The established approach adopted to answer the question of whether media representations of suicide can influence suicidality has been to interpret the problem as a simple empirical issue to be resolved by demonstrating whether exposure to suicide representations in the media appears to be associated with some observable increase in some manifestation of suicidality.

From such an empiricist perspective, research investigating media suicide contagion may be labelled 'social' or perhaps 'social scientific' research, as opposed to specifically sociological or psychological. This follows because the problem is conceived as purely empirical, to be resolved by using a multi-disciplinary armoury of research tools to generate evidence for, or more properly against, the research hypothesis that suicide representations can influence suicidality. Within such approach, there may be no 'socio' or 'psycho' logic to apply to the problem; instead, the task is simply one of rejecting or confirming the empirical hypothesis.

Nevertheless, and historically speaking, the majority of empirical research into the putative phenomenon of media influence on suicide has been undertaken

by sociologists as opposed to psychologists, notably and most recently by the American sociologists David P. Phillips (e.g. Phillips 1974) and Steven Stack (e.g. Stack 1987). One reason for this sociological attention may be because of an increased readiness on the part of certain sociologists to use secondary data to operationalise research, a strategy that has the advantage of not raising ethical problems of deliberately exposing research participants to what may be considered a suicide risk factor. Further, and insofar as media influence can be labelled a 'social' risk factor in the typical trichotomisation of suicide risk factors into those that are "social", "psychological" and "physiological", media suicide contagion may understood as falling under the remit of sociology. Indeed, the sociology of the media has long dealt with the thorny and broader issue of how media representations might influence both perceptions and action (cf. Trowler 2000).

However, while empirical research into media influence on suicidality may have been operationalised primarily by sociologists, theoretical contributions relevant to the debate have been made principally by psychologists. Indeed, as we shall see, the idea of 'contagion' denotes a specific form of social influence in social psychology, and theoretical models of social contagion have been developed by a number of social psychologists within the broader context of social influence theory (e.g. Levy and Nail 1993). Likewise, an active area of social psychology is that of social cognition, an enterprise involved with the investigation of how meanings and motivations informing action both construct and are constructed by social environments that include media representations (e.g. Fiske and Taylor 1991, Bandura 1994).

So is this project an exercise in sociology or psychology? An answer to this question depends on how the two enterprises are conceptualised, but the interpretation that will be proposed here is that the focus of this research lies on the ambiguous cusp between micro-sociology and social psychology. Specifically, the conceptual integration that will be proposed here to guide and inform research will involve aspects of an interpretive sociology that sees the act of interpretation as central to understanding how people imbue situations with significance to inform their action, and social cognition that is based on similar assumptions about how information represented in the actions of others may be used to help make sense of the world.

1.2 Structure, Summary and Proposed Contributions of the Report

To explore the idea of media suicide contagion, this project will first clarify how the notions of suicide and contagion shall be conceptualised. Following this introduction, a review and critique of the empirical evidence for the putative phenomenon will be provided. Noting an absence of either compelling evidence for such contagion or a theoretical model to organise research into the idea that media representations may influence suicidality, a socio-cognitive model of suicide contagion will be developed building on insights from social contagion and social cognition research. During the development of this model, a series of empirical studies to be conducted over the Internet will illustrate the empirical plausibility of the proposed mechanisms that may describe how people considering suicide might use media representations of suicide to inform suicide decisions. To achieve this end, several new research

possibilities afforded by the Internet as an emerging research medium will be explored and operationalised. Specifically, a new Internet-based research tool will be proposed that harnesses the interactive and distributed technology of the medium to generate what will be called 'social mindscapes' of suicide that capture the dominant sets of meanings of suicide for particular groups. These social mindscapes of suicide will then be used in a study seeking to investigate how Internet representations of the rock singer Kurt Cobain's suicide might be used by some people to inform subjective meanings and motivations around suicide. The report will conclude by summarising the new socio-cognitive model and the new evidence for what might be called "cyber suicide contagion".

It will therefore be, despite misgivings about archival research suggestive of the empirical plausibility of media suicide contagion, that the central finding of this report will be it does make some sense to see exposure to media suicide representations as able to influence suicide. This conclusion will be reached by following a somewhat different path to previous research. Specifically, this project will *first* develop a theoretical model of media suicide contagion that will *then* be used to guide and interpret empirical research designed to assess the empirical plausibility of the developed model. Using the theoretical mechanisms of priming and modelling, logical arguments for media suicide contagion will be developed, and then an empirical illustration of how each the theoretical mechanisms underpinning the model might operate will be conducted.

The socio-cognitive model to be proposed here will suggest that the possibility of media suicide contagion may be understood in terms of how positively framed media representations may evoke a non-random subset of possible meaningful associations around suicide, thus increasing the salience of those meanings in the minds of those exposed to them. For the vast majority of people not caught in any unresolved dilemma over whether to act suicidally, this priming may have no effect on decisions, but for any such conflicted individuals the primed meanings may colour suicidal thought and perceptions, thereby possibly influencing a suicide decision. Any influence of this relatively automatic priming may then be compounded by a possible deliberate use of the media representation to update internal models of the meaningful consequences of suicide if those representations are perceived as more positive than anticipated, thereby potentially and indirectly informing suicide decisions. In short, the idea developed here is that through a nested hierarchy of influence consisting of priming and modelling, exposure to positively framed media representations perceived as meaningful could, in some distressed individuals in situations experienced as potentially suicidal, modify interpretations of the meaning of suicide and the situation and thereby inform suicide decisions such that suicide becomes more likely.

In assessing the empirical plausibility of this socio-cognitive model it will be shown that it makes some sense to see exposure to particular media representations as priming and colouring interpretations of situations, particularly if they are ambiguous situations requiring a response. Specifically, media exposure to the concept of suicide over the Internet prior to interpreting

a potentially suicidal situation will be shown to be consistent with the idea that such exposure may influence the degree to which that situation is perceived as suicidal. Similarly, the idea that people may use vicarious experience gathered over the media to update and inform internal models that are the subject of current deliberation will be shown to be an empirically plausible theoretical mechanism. Finally, it will be shown that perceptions of one's own suicidality do seem to be influenced in some cases by exposure to media suicide representations, at least over the Net, in an investigation of the potential influence of a popular celebrity suicide note.

In terms of the proposed original contributions to be made in this report, these can be broken down into substantive and methodological contributions. In terms of the former, this report will seek to provide a consolidated and integrated overview and critique of the evidence generated for and against the putative phenomenon of media suicide contagion. Had such a document been available as a reference document from which this research project could have proceeded, its central task would have been greatly facilitated. Therefore, it is hoped that a useful contribution of this research is the provision of just such a reference document that might serve as a point of departure for future investigation in this area.

Secondly, the socio-cognitive model of media suicide contagion that will be developed here is new, representing a radical departure from the behaviourist and mechanistic stimulus-response proto-models that have tended to characterise previous speculations over the possibility of such an influence. Rather than conceptualise media suicide contagion in terms of what suicide

representations 'do' to people, whether this involves 'triggering', 'precipitating' or otherwise non-specifically 'causing' suicide, a perceptual reorganisation from a more interpretive stance will allow this project to frame the question in terms of what people might do to suicide representations. Specifically, the theoretical model of media suicide contagion that will be developed here will focus on how people might use information around them, including that which is mediately available, to interpret situations, resolve problems and inform action. Thus, the second proposed contribution of this report will be the specification of a new theoretical model, based on specific theoretical mechanisms, through which media suicide contagion might plausibly occur. Although this will involve drawing from the existing ideas of priming, modelling and framing, these ideas will be extended and integrated for the first time into a specific model of how suicide representations might interact with the production of suicide.

Thirdly, the thesis will provide limited but new and theoretically informed empirical evidence supportive of the idea of media suicide contagion. For the first time, the idea that exposure to suicide representations over the emerging medium of the Internet might influence suicidality will be investigated.

In terms of proposed methodological contributions, these will be two-fold. Firstly, a research tool will be developed to generate 'social mindscapes' that capture constellations of suicide meanings for a particular group, by making use of largely untapped capacities of the Internet as a research medium. The process of evolving a social mindscape is based on the iterative, interactive and constructive contributions of participants, and will be conceptualised in

terms of an extension of grounded theory insofar as the social mindscape generator allows patterns to emerge from the data through adaptive indexing and constant comparison of responses. The source code for the online research tool, written in Visual Basic that generates the adaptive hypertext network upon which the social mindscapes are based is included on the data CD in the appendix of this project. Additionally, a permanent open account has been set up at www.mememapping.com where the tool resides for any researchers wishing to set up studies using the tool. The username is 'Sussex' and password is 'university' for setting up, publishing and managing projects over the Internet.

Secondly, the report will show how the Internet as a research medium might be used to make some headway through an apparent ethical impasse in conducting research into possible pro-suicide media influence. This issue will be discussed fully in the main body of the research, but briefly one of the most significant problems facing researchers interested in assessing the empirical plausibility of media suicide contagion is that prospective, that is, forward- or pro-directed research runs the risk of becoming instrumental in the suicidality of participants. A way in which the Internet may provide researchers with a potential solution to this problem will be proposed, allowing research to proceed with a degree of internal rigour. Specifically, it will be suggested that 'frames technology', the ability to be virtually speaking in two or more places at once when logged onto the Internet, may provide researchers with a new research opportunity to assess the empirical plausibility of the media suicide contagion hypothesis.

In this way, the answer to the question of what this thesis proposes in terms of new contributions and new thinking can be summarised as follows:

1. A critical review of research and thinking pertinent to the idea of media suicide contagion

2. A new theoretical model based on specific theoretical mechanisms that might be useful in interpreting the possibility of media suicide contagion

3. New evidence in a new medium assessing the plausibility of media suicide contagion generated in a theoretically informed context

4. A new grounded research tool for constructing structured insight into the meaning of suicide, and possibly other concepts, for particular groups

5. A new way to conduct online research into potential pro-suicide media influence without exposing participants to any increased risk of such influence

1.3 Clarification of the Research Problem

1.3.1 The Concept of Media Contagion

Within medical parlance, contagion denotes both the process and object of communicable infection, that is, 'the communication of disease from body to body by contact direct or media' (OED 1989; 806) as well as the infectious pathogen, such as a virus, itself. Similarly, the concept of contagion outside medicine refers to both the process and object of *communicable influence*,

that is, to 'the contagious or "catching" influence or operation of example, sympathy and the like' (OED 1989; 806), and to that which is putatively socially communicated in this way, for example suicide. Specifically, as a concept in social science, *social contagion* denotes a putative influence of exposure to an act or emotion manifested by one person on the reproduction of a similar act or emotion independently of any perceived deliberate and external pressures for adoption (cf. Levy and Nail 1993). In this sense, contagion refers to a form of social influence in which exposure alone, media or direct, to an act or emotional state influences the likelihood of adopting a similar act or state.

Although the effect of contagion may be a clustering of similar representations of acts or emotional states, it is not this outcome that defines contagion. Rather, the defining characteristic is that such clustering or synchronisation is produced in the absence of any perceived deliberate and external pressure to comply or obey. In this way, contagion may be differentiated from other forms of social influence that can result in the clustering or homogenisation of acts such as coercion in which power, that is, control over incentives – rewards and punishments – is perceived as pressures for compliance or obedience to instructions. Likewise, contagion may be seen as differing both from conformity insofar as the latter may be interpreted in terms of perceived external pressures to comply with group norms, and from argument manifested through deliberate acts of persuasion. In sum, contagion refers to the idea that independent of external pressures to comply with, obey or generally follow others, people may still, under certain circumstances, tend to

follow each other (cf. Polansky, Lippitt and Redl 1950, Milgram, Bickman and Berkowitz 1969, Stephenson and Fielding 1971, Levy and Nail 1993, Freedman 1982).

A paradigmatic example of contagion is the contagion of yawning. The act of yawning appears to increase the likelihood of yawning occurring in those exposed to it – the defining feature of contagion. Similarly, human emotions seem to have an analogous contagious quality; seeing somebody happy or sad seems to influence our own affective states, a mechanism of emotional contagion that is explicitly used by some therapists to gain insight into patients' subjective states (Hatfield, Cacioppo and Rapson 1994). Likewise, we tend to synchronise our movements with the facial expressions, voices, movements and instrumental behaviour of those with whom we are in contact, and these automatic and involuntary examples of contagion have been dubbed *echopraxia* (English and English 1958) and, more recently, *echo contagion* (Levy and Nail 1993).

It should be clear that, understood in this way, contagion refers to a *specific* form of social influence that may result in the clustering of phenomena, and therefore is quite different from a project in mathematical sociology that seeks to draw from an associated epidemiological model and describe the spread of behaviour, using virological and epidemiological formulae, as if the behaviours were actually infectious diseases (e.g. Rashevsky 1939, 1951, Rapoport 1983, Granovetter and Soong 1983, Davis and Hardy 1985, Crane 1991, Rodgers, Rowe and Buster 1998). The essential difference between these epidemiological models and the idea of contagion is that the former do not

specify or concern themselves with *how* a behaviour may spread, through circumstance, coercion, persuasion, conformity or contagion. Rather, the focus in these cases is an exclusively behaviourist one. Although the importation of mathematical models of disease to inform this project has had some limited success in describing clusters of smoking (e.g. Rowe, Chassin, Presson, Edwards and Sherman 1992), delinquency (Jones 1998), youth sex (Rodgers and Rowe 1993), substance abuse (Ennett, Flewelling, Lindrooth and Norton 1997), criminality (Jones and Jones 1995) speeding (Connolly and Aberg 1993), consumer behaviour (Bass 1969) and even suicide (e.g. Davis and Hardy 1986), these are distinct from the idea of contagion.

If contagion can be conceptualised in terms of a synchronisation with those to whom one is exposed in the absence of any perceived external pressure to do so, then a valid question regarding contagion is its relationship with the concept of imitation. Indeed, the everyday usage of the word imitation includes those behaviours that researchers might term contagion. However, one way to distinguish between contagion and imitation is to see imitation as a generic form of copying behaviour, of which contagion is but one form (cf. Levy and Nail 1993). For example, an individual might be instructed and coerced into following the lead of a group leader, that is, imitate their actions. In such a case, the resultant copying behaviour would clearly not be a case of contagion, although it could be called imitation. Likewise, someone might perceive group pressure to conform to the actions or opinions of others, and therefore imitate their actions. However, the presence of perceived external

pressures to conform would make the imitative action one of conformity rather than contagion.

Another way of distinguishing between imitation and contagion is to adopt the convention used by some psychologists and restrict the usage of the word imitation to cases of *observational learning* involving the acquisition and performance of new motor skills that were not possible before exposure (e.g. Thorndike 1898, Blackmore 1998). Here, imitation may be interpreted as referring only to instances of 'learning to do an act from seeing it done'. In contrast, contagion may refer to acts and states for which the acquisition of new skills through individual or observational learning is not a necessary precondition.

Although it *would* be possible to redefine imitation so as to denote the object of focus of this research report, and indeed this would be in keeping with the parlance of several sociologists who have investigated this phenomenon (e.g. Phillips 1980, Stack 1996), the decision to couch the research in the language of contagion is not only one of convention based on the fact that 'suicide contagion' is the established denotation of the phenomenon under investigation, but also because the idea contagion is a more precise and less ambiguous a term than imitation.

Within this context of contagion, *media* contagion can be understood as referring to instances where exposure to representations through the media appears to have some influence in the production of similar acts. In other words, following the basic distinction made in the idea of biological contagion between 'direct' and 'media' contagion, the focus here will be on the latter,

referring to a putative influence of exposure to stories decimated through the television, press, and other media, including emerging 'new media' such as the Internet, on the reproduction of similar acts. The idea of media contagion is that independent of any perceived deliberate request or pressure to act in a certain way, such as through a mediatised political campaign, exposure to certain representations may increase the likelihood of re-presenting the representation itself. The paradigmatic and highly contested example of such media contagion is the putative influence of exposure to violence in films that, it has been alleged, can somehow 'rub off' on viewers, who supposedly leave the film more ready to engage in violent acts (e.g. Berkowitz 1986). Indeed, aspects of this controversial 'media effects' research on *other-directed* violence will be used in the construction of a theory of a media contagion of the form of *self-directed* violence known as suicide (see below for a clarification of the meaning of suicide that will be adopted here).

In sum, *media contagion may be described in terms of denoting a putative influence of exposure to symbolic representations of an act or state such that eliciting a similar act or state becomes more likely*.

1.3.2 The Concept of Suicide

Suicide can be understood in its conventional sense to describe acts underpinned by intent that has as an object of focus self-inflicted death[1]. Suicide may be manifested as either *completed suicide* referring to suicidal acts with a fatal outcome, or *attempted suicide,* suicidal acts with a non-fatal outcome or *suicide ideation* referring to acts of suicidal thought. Conceptualising suicide in this way, in terms of subjective intent allows death from suicide to be contrasted with homicide, the intentional infliction of death on another, and accidental death, deaths devoid of intentionality. Such a conception does not necessarily ascribe any ultimate causal efficacy to personal motivations, rather it simply takes cognisance of the fact that the notion of suicide is only meaningfully distinct from other causes of death within

[1] Suicide is defined as the 'act of voluntarily or intentionally taking one's own life', (Encyclopaedia Britannica 1994), 'intentional, self-inflicted death' (Encarta 1998) 'the action or an act of intentionally killing oneself' (New Shorter Oxford English Dictionary 1993), 'the act or an instance of killing oneself intentionally' (Collins Concise English Dictionary 1987). A fuller definition provided by Shneidman (1985) is; 'Currently, in the western world, suicide is a conscious act of self induced annihilation best understood as a multidimensional malaise in a needful individual who defines an issue for which the suicide is perceived as the best solution.' From these definitions two central components of suicide may be noted; firstly its goal-directed nature towards self-inflicted death that delineates suicidal acts from possible self-destruction incurred whilst pursuing other goals. Secondly, suicide is a self-directed individual phenomenon; it is impossible to commit somebody else's suicide, and a group or society cannot commit suicide, other than metaphorically. Consistent with these criteria, in European countries, a suicide verdict on a fatality must demonstrate that a) the individual killed him or herself, and b) they did so intentionally. For mortality statistics in the UK, suicide fatalities refer to acts of fatal self-inflicted harm where intent to die cannot be ruled out. Thus, suicide, as a category within mortality statistics, comprises both verdicts of intentional and fatal self-harm as well as verdicts where intent remains undetermined. These two categories refer respectively to codes E950-E959 and E980-E989 of the World Health Organisation ninth International Classification of Diseases 9 (ICD9), and codes X60 – X82 and Y10 - Y32 of the newer ICD10, in which suicides are classified in terms of the proximate cause of death, that is, the method employed or 'mode' of suicide. Although this contemporary understanding of suicide fatalities as self-intended and self-inflicted is relatively standard, it differs from some early conceptualisations such as that of Durkheim (1970 [1897]) who substituted intention for knowledge that death would occur, primarily because he thought that inferring knowledge from a 'positive or negative act' resulting in death, would be easier to inferring would be easier to inferring intent, but also to allow sacrifice, such as in war, where death is not intended but merely a consequence of other intentional action, to be subsumed under the concept of suicide.

a conceptual framework that classifies and interprets acts as the product of subjective intent.

It is of course *possible* to adopt an alternative behaviouristic understanding of suicide as behavioural gestures continuous with self-killing. However, not only would such an interpretation be quite at odds with the established meaning of the concept, thereby inviting confusion, but it would also eliminate any distinction between accidental death, suicide and ultimately murder. It is of relevance here to note that the term, *parasuicide*, sometimes contemporaneously used as a synonym for attempted suicide, was originally coined as a behaviourist term to denote the set of all behaviours that are behaviourally continuous with suicide, that is, 'behavioural analogues' of suicide that might not be underpinned by suicidal intent (Kreitman, Smith and Tan 1969).

If suicide is conceptualised as being underpinned by a particular type subjective intent, then several implications follow for the investigation of media suicide contagion that may usefully be spelt out. Firstly, it follows that common to all suicidal phenomena will be suicide ideation, characterised by a subjective intent oriented towards self-inflicted death. This means that behavioural gestures that are in some ways continuous with suicide but not underpinned by such subjective intent would not, from such an understanding, be seen as properly suicidal. Rather, suicide attempts and completed suicide may be understood as suicidal only insofar as they are underpinned by a common subjective state characterised by intent oriented to self-inflicted death. Maintaining such an interpretation cuts through the debate among

some sociologists as to whether the social and personal phenomenology of attempted suicide and completed suicide are essentially different (e.g. Platt 1984, Hood-Williams 1996). From the perspective adopted here, deliberate self-harm underpinned by anything other than intent oriented towards self-inflicted death, while interesting and certainly worthy of research, is not suicidal. Such a clarification may help avoid the logical problems involved when fundamental differentiations are made between suicide phenomena based simply on behavioural outcomes; outcomes that may be more of a product of circumstance than anything else.

A second and somewhat less convenient implication of adopting this established conception of suicide is that empirical research into suicidal phenomena is immediately complicated. The problem is that subjective intentions are not directly observable, which means that the significance of an act behaviourally continuous with suicide may not sometimes be unambiguously established by a researcher, either because the suicidal intent was transient and has passed or, more seriously, the source of the intention is deceased. As a consequence, when research does focus on suicide fatalities, the investigator must rely on a circumstantial constellation of heterophenomenologically available but inherently ambiguous signs and second-order interpretations of subjective intent made by any witnesses. This means that any original suicide intent may be an unrecoverable part of a unique and transient contextually defined situation. The situation may be made further problematic because any establishment of that intent may also depend on the transient subjective intentions of those participating in the

verdict. The practical upshot of this is that particular verdicts of the cause of death, including suicide, may have a character that is non-trivially and differentially socially constructed (cf. Douglas 1967). This is the central insight that formed the basis of the interpretivist critique of the positivistic sociology of suicide developed through the 1960s and 70s, specifically against a reliance on concomitant variations between aggregated suicide verdicts to make theoretical inferences. Apart from any logical problems of making statistical inferences that commit the ecological fallacy (Robinson 1950), that suicide statistics might be differentially constructed means that any differential associations between aggregated verdicts may be more of a function of how suicide data is differentially produced rather than indicative of any underlying casual association between variables. It was this insight prompted a shift in substantive focus in the sociology of suicide away from comparisons of the levels of suicide verdicts, and towards an investigation of how deaths come to be differentially perceived and labelled as suicide (e.g. Douglas 1967, Atkinson 1971, 1978, Garfinkel 1967).

The immediate implication of the foregoing for the current project is to take cognisance of the limitations of suicide fatality verdicts, particularly aggregated archival data, as a potential resource in the investigation of potential media influence on suicidality. However, there is a concomitant opportunity afforded by this conception of understanding suicide and underpinned by subjective intent, and this is that research might legitimately focus on ideational aspects of suicidality. Indeed, as we shall see, some of the most recent research on media suicide contagion has done just this, focusing on how suicide

representations in the media may be used to inform subjective interpretations of one's suicidality.

Although the focus of this project is not suicide itself, rather the focus is on the idea that exposure to suicide stories might be a suicide risk factor, it makes sense to situate this putative risk factor within the broader context of suicide and other factors and antecedents thought to be relevant in the production of suicide.

Firstly, in terms of the observed ecology of suicide, official figures for completed suicide subject to the interpretive critique outlined above put suicide in most countries as the 9th or 10th most common cause of death. This means, in the UK, the most likely person to be responsible for your death is you. In 1997, just under 6000 official suicide fatality verdicts were made, meaning that on average one person was held to have committed suicide every hour and a half. As is the case for almost all countries, the majority of these verdicts were for men. In England, for example, the official suicide rate for men in 1997 was 18 per 100 000, some three times the level for women. Overall, in the UK men aged 25-34 feature most frequently in the suicide fatality statistics with a rate of 24/100 000, followed by men 75+. In terms of changes in the incidence of suicide verdicts, in England and Wales, the overall suicide fatality rate had fallen in 1997 by about 10% relative to the rate ten years earlier. In contrast, in Scotland and Northern Ireland the rate increased by at least this amount (see Figure 1 for details). Notable within these fluctuations has been a substantial increase in recorded suicide fatalities of young males aged 15-24 over the last decade in the UK, increasing by some

20%, making suicide the second most common cause of death for this age cohort.

Figure 1: UK Official Suicide Fatality Statistics

1997	Official Suicide Fatalities (n)	Rate per 100 000	Change since 1987	Men	Women
England	4693	12	-12%	18	6
Scotland	874	20	+18%	32	10
Wales	288	12	-10%	19	6
Northern Ireland	137	11	+10%	17	4
Republic of Ireland	874	20	+50%	25	5

Source: Samaritans 1998

For attempted suicide, there are no official UK statistics but 'best estimates' derived from data collected from emergency hospital referrals of deliberate self-poisoning and various ad hoc studies suggest that for every completed suicide there are at least twenty suicide attempts, with an estimated rate in the order of 400/100 000 (Samaritans 1998). In contrast to suicide fatalities, it would seem from this research that women are more likely to appear in suicide attempt statistics than men; the ratio of deliberate self-poisoning between men and women appears to be in the order of 3:2. Admissions for deliberate self-poisonings appear to be rising, increasing some 30% between 1992 and 1997, with young women aged 15-19 figuring most prominently in these admissions. However, there has also been a dramatic increase in such admissions for young males (15-24), which nearly trebled between 1985 and

1995. It is estimated that 19 000 adolescents attempt suicide every year in the UK.

With respect to the subjective phenomenology of suicide, suicide is often associated with feelings of melancholy, hopelessness, loss, loneliness, an inability to cope, failure, and dissatisfaction (cf. Beck Resnik and Lettieri 1986, Kobler and Stotland 1964, Maris 1981, Dolce 1992). In terms of motivations for suicide, both Baechler (1979) and Shneidman (1985) have suggested that suicide might usefully be understood in terms of problem solving, that is, meaningful acts 'in order to' rather than 'because of', and Shneidman has suggested that the common goal of suicide, as a meaningful act, is the *cessation* of distress and unbearable pain.

In addition to phenomenological antecedents to suicide, a number of more readily observable antecedents have been associated with suicide, often with overlapping sociological, psychological and physiological dimensions (see Maris 1981 for a comprehensive review). For example, antecedents associated with suicide, typically classified as 'social', include unemployment, social and geographical mobility, divorce, prison sentences, negative social interaction, social isolation and lack of social cohesion, certain occupations such as the medical professions, and membership of minority groups. Correlates labelled as being of a more psychological nature include certain psychiatric conditions, especially clinical depression, psychological trauma following psychological and sexual abuse, domestic stress following family break-ups, partner or parental abuse, and conditions arising from substance abuse, particularly alcohol. Finally, physiological conditions associated with

suicide include chronic and terminal illnesses, particularly AIDS, physical handicaps, low levels of growth hormone and low levels of the neuromediator serotonin.

Despite the early political project of Durkheim to 'own' suicide for sociology, claiming that a dislocation between human needs for social integration and regulation and the capacity of social environments to address those needs was *the* generative cause of suicide, suicide today is almost universally considered a complex multidimensional phenomenon with many interlocking facets. To this end Maris (1981), has suggested that suicide may usefully be conceptualised in terms of a 'career' of eclectic conspiring circumstances that give rise to desperation borne of repeatedly broken tolerance thresholds.

1.3.3 The Concept of Media Suicide Contagion

> *'There is a moral or psychic contagium in certain books that is as definite and disastrous as that of the plague… The pubescent reader is in the greatest danger from unhealthful reading. He or she is in a condition of unstable equilibrium – adjustment to environment is not yet perfect; the emotions are keyed to the highest pitch; the centers of ideation are plastic.' (Phelps 1911: 273)*

From the foregoing, the understanding of the concept of media suicide contagion that will be adopted here should be emerging. Media suicide contagion refers to a putative influence of exposure to symbolic representations in the media of intentional acts or states whose object of focus is self-inflicted death on the production of similar acts or states such they become more likely. Put simply, media suicide contagion refers to the idea that exposure to suicide stories is a risk factor in the production of suicide, or more simply still, that suicide stories beget suicide. From the interpretive

perspective adopted here, such a putative influence may manifest itself either behaviourally and/or ideationally, where the former may or may not have a fatal outcome.

Given the polemic around the plausibility of any kind of 'media effects', it is not surprising that the notion of media suicide contagion is anything but uncontroversial. Within the hyperbole that often surrounds discussions of media influence, it is important to stress what this hypothesis of media suicide contagion, as understood here, is *not*. The idea of media suicide contagion is not that media exposure to suicide, in some arbitrary thought experiment could, acting alone in isolation from all other factors at play in the production of suicide, *cause* suicide. Rather, the more cautious, but still radical idea is that media exposure to media suicide representations occurring within a mesh of eclectic and multi-dimensional factors underpinning suicidality might, under certain circumstances, increase the likelihood of some manifestation of suicide.

Significantly, such an understanding of media suicide contagion would not therefore take sides in the rather sterile and arbitrary debate of whether media suicide representations, or indeed any other antecedents associated with suicide, are 'underlying', 'generative' 'causes' or merely 'precipitative' 'triggers' of suicide (Durkheim 1970 [1897], Phillips 1974). In fact, it is possible to interpret such debates as somewhat futile insofar as, even within a framework of mechanistic causal explanation, it is empirically impossible to assess whether an influence generates or precipitates suicide. The reason why such a differentiation is empirically meaningless is that it requires a clairvoyant

knowledge of what would have happened in some other imaginary world had a particular suicide not occurred.

In sum and to reiterate as a *media suicide contagion hypothesis*, the object of enquiry for this report is the idea that exposure to suicide representations in the media may, in certain circumstances, influence an individual's suicidality in such a way as to make suicide more likely.

1.3.4 The Historical Context of Media Suicide Contagion

The general idea of suicide contagion may be traced back to Ancient Greece when young women of Miletus were reported to have killed themselves in a wave of suicides that only ceased when authorities started publicly exposing the dead bodies in the market place (Davidson 1989). More recently, the idea that exposure to suicide, media or direct, could influence suicide, became popular during the nineteenth century, and was frequently used as an explanatory device for accounting for unexpected pockets or 'clusters' of suicides. For example, in 1841 a renowned epidemiologist, William Farr, concluded from his investigation of suicide 'no fact is better established in science than that suicide is often committed from imitation' (cited in Phelps 1911). Similarly, at the end of the nineteenth century, Durkheim declared in his treatise on suicide that 'no fact is more readily transmissible by contagion than suicide' (Durkheim 1970 [1897]: 141-2) although he held the effect of contagion to be local and precipitative (see above) and therefore not observable in annual suicide rates. This opinion led Durkheim to argue that the 'fact' of suicide contagion did not warrant intervention pertaining to how suicide was communicated in society.

In the early twentieth century, the role of the media in influencing suicide, particularly among youth, became an increasing concern of health professionals across Europe and the US. An international conference was organised in Vienna in 1910 to discuss youth suicide and the role of the press (Häfner and Schmidke 1989), and in 1911 the American Medical Association set up a commission to focus on what was perceived as the increasingly important problem of suicide contagion (Hemenway 1911). The same year, a paper was published in the Journal of Sociological Medicine that argued forcefully that press reports of suicide were responsible for imitative suicide (Phelps 1911).

The moral panic surrounding the possibility of media suicide contagion prompted the U.S. national association of druggists to condemn the mass media as having a 'deleterious' and 'lethal' effect on the US population (Häfner and Schmidke 1989). In 1948 in the UK, the British Medical Association proposed a ban on press reports of suicide in an attempt to curtail the putative effect of media suicide contagion.

More recent commentaries on the possibility of media suicide contagion have been somewhat more measured but, based on an increasing body of controversial research that will be reviewed below, a number of media guidelines have been produced grounded in the belief that exposure to suicide stories, particularly among young people is a genuine suicide risk factor (cf. Diekstra 1989, Samaritans 1998b, O'Carroll and Potter 1994). For example, voluntary media guidelines on how to represent suicide now exist in the UK (e.g. Samaritans 1998a), the US (e.g. CDC 1994), and in Australia (e.g.

Herman 1996). The content of the various guidelines are broadly similar and may be summarised as follows:

· avoid 'how-to' descriptions of suicide

· avoid portraying suicide as painless

· avoid presenting simplistic explanations for suicide

· avoid repetitious or excessive reporting of suicide

· avoid sensational portrayals of suicide

· avoid presenting suicide as an accomplishment; for example, do not use the term 'successful suicide'

· avoid glorifying suicide or people who commit suicide.

· avoid focusing solely on the positive characteristics of the person's life

1.4 Media Suicide Contagion: The Problem of Evidence

While the idea of media suicide contagion is relatively simple to grasp, assessing whether or not such a phenomenon appears to pattern empirical suicide phenomena has proved to be notoriously difficult. The central problem for research has been one of internal validity.

Internal validity pertains to the interpretation of research data, specifically to the extent that alternative interpretations of the data to the research hypothesis can be discounted. If a research design has internal validity, then this means that alternative interpretations of the data may be discounted as

unlikely. In the context of media suicide contagion, an example of a research design with low or poor internal validity would be one that first identified a suicide fatality and then proceeded by looking to see whether the suicide was anteceded by exposure to some suicide representation such as, for instance, reports of the suicide of a celebrity rock star. For example, a number of teenage "copycat suicides" have been attributed to stories of the 1994 suicide of Kurt Cobain, lead singer of the cult rock group Nirvana (Pereira 1997). One concrete example of this retrospective reasoning was the US teenage suicide of Michael Workman in 1997 by his mother who published the following note regarding the suicide to the Internet.

> *'My 15 year old son, Michael, took his own life with a single gunshot to the head on April 8, 1997. He was a wonderful person, straight A student, very smart, creative and now, we realize, very lonely and sad. He left a note that said he just didn't care anymore and this was the only way out for him. What I want to comment on is that he also was a fan of Kurt Cobain, from the band, Nirvana and Kurt also killed him self by gunshot on April 8th. **This was a copycat suicide** that in some ways I feel responsible for because I knew how much he liked the music and he identified with Kurt. I never thought that he would have followed his path; we even discussed what a loser he was to commit suicide. My son called me before he made his choice and he told me he loved me, so in some ways I also feel he had made up his mind regardless. I think about him constantly and I feel empty and without purpose. I keep busy but it's just going through the motions. In time I hope joy will return. I just wish I could hold him again. I love you Michael! Mom'*
>
> *Angela Workman <twork55@aol.com>Eureka, CA USA – http://www.webhealing.com/guestbook/gb7.html*

Although such reports may be distressing and moving, any backwards inference that exposure to reports of suicide somehow influenced suicide suffer from low internal validity because they involve making inferences to a

putative influence of media representations from the expected outcomes of that influence, suicide. The problem here is that the suicide or some cluster of suicides may have been a function of any number of variables that had nothing to do with exposure. Because the interpretation is retrospective, the researcher will have only a sketchy, or at best incomplete, historical knowledge of other factors that may have influenced the suicide because he or she was not present at the time, and this means that it is generally impossible to discount, by either the logical structure of the research, or by empirical falsification, such possible influences. This means that any perceived association *from* suicide *to* exposure to suicide stories might well be spurious. Indeed, in the case of completed suicides, it may be quite impossible to establish whether or not the individual was actually exposed to a media suicide representation, leaving the researcher with the dubious option of inferring exposure from the fact that media stories happened to be published or broadcast around the time of the suicide.

To give another concrete example of an interpretation of events with low internal validity, the case of a suicide cluster occurring in South America 22 years ago is instructive. In a very short space of time, the level of suicide in a town went from zero to epidemic proportions, indeed it virtually wiped out the town's population (Cialdini 1993). What was particularly peculiar, and reminiscent of the Micronesian suicide epidemic, was the suicide method employed for these suicides. Virtually all the victims poisoned themselves with a deadly concoction. It seemed that not only were suicides influencing suicide decisions in terms of whether or not to commit suicide, but were also

having a qualitative influence on the choice of how to commit suicide. This might appear to be evidence of suicide contagion but recovered film footage and eye witness accounts from survivors of the apparent suicide epidemic indicated that the suicide cluster was not so much a product of contagion, but a macabre exercise of coercive persuasion by a sect leader, Jim Jones, over his followers in what became known as the Jonestown mass suicide in Guyana 1978. It seemed that suicides had little or nothing to do with the effect of exposure to suicide and everything to do with an organised plan and indoctrination on the part of the sect officials. Although the suicide cluster was indeed one of the most potent examples of the power of social influence, it may have had little or nothing to do with contagion.

It is the case that the extra possibility of direct deliberate and coercive influence may usually be discounted where exposure has been media rather than direct, but this would miss the central point which is that inferring back from a suicide cluster to whatever putative precipitating event will be uncompelling because of the logical problems of ex-post facto interpretation. For example, even if exposure prior to some manifestation of suicide could be established, and all other reasonable accounts could be discounted, there would still be no more reason to suspect contagion, that is, exposure influencing suicidality than an opposite interpretation, of suicidality influencing exposure. In other words, the suicidal individual might have chosen to experience media stories of suicide precisely because they were suicidal. It is for this reason that retrospective correlations between suicide and exposure to suicide, such as the observation that suicidal people are more likely to know

or have known suicidal people, is not compelling evidence for suicide contagion (such correlations have been identified by, among others, Kreitman, Smith and Tan 1969, and more recently Thorlindson and Bjarnason 1994, 1998).

It might seem that one possible way around this conundrum would be to look for clusters of suicide that are qualitatively similar, that is, manifested in a particular way, and then identify a common possible source of media exposure that describes a similar suicide. For example, suicide fatalities by asphyxiation recently increased by 313% in New York, and at a quarter of the scenes of these suicides a book was found called Final Exit, written for terminally ill persons that recommended asphyxiation as a suicide method (Marzuk, Tardiff, Hirsch, Leon, Stajic, and Hartwell 1994). This might appear somewhat more compelling evidence for media suicide contagion, that the book had influenced the decision to commit suicide. However, it is important to note that media suicide contagion refers to an influence on suicide and the intentions that underpin such acts and not necessarily on *how* those intentions are manifested. It is perfectly possible that people used information in the book to inform the *mise en oeuvre* of suicidal intentions, without actually influencing their decision to act suicidally. In fact, suicide fatality levels in New York did not rise during this increase in suicide by asphyxiation, an observation that could be interpreted of supportive of this alternative non-contagion account. Similarly, and for the same reason, other reported qualitative clusters of suicide including the clustering of plastic bag asphyxiation (e.g. Church and Phillips 1984), self-immolation (e.g. Ashton and

Donnan 1981), antifreeze poisoning (e.g. Walton 1978), self-mutilation (e.g.

Kaminer 1986), or jumping from famous places (e.g. Seiden and Spence

1982) are not, apart from any derivative indirect effect of the differential

lethality of modes of suicide, necessarily indicative of contagion (cf. Lester

1987).

2.0 The Operationalisation of Media Suicide Contagion Research

'That suicides are alarmingly frequent in this country is evident to all – and as a means of prevention, we respectfully suggest the propriety of not publishing details of such occurrences, 'No fact', says a late writer, 'is better established in science than that suicide is often committed from imitation. A single paragraph may suggest suicide to twenty persons. Some particulars of the act, or expressions, seize the imagination, and the disposition to repeat it, in a moment of morbid excitement, proves irresistible.' In the justness of these remarks we concur, and commend them to the consideration of the conductors of the periodical press.'

(A. Brigham 1911 in the American Journal of Insanity)

If retrospective correlational and case study research into the putative influence of media representations of suicidality raises problems of internal validity, then a consequence has been that researchers have had to adopt alternative approaches to investigate the possibility of media suicide contagion. The general solution proposed has been to operationalise research 'prospectively', that is, by first identifying a possible source of media influence on suicide and then seeking to measure any influence. Research adopting such an approach has been undertaken since the 1960s and has proceeded in one of three ways using either archival, survey or experimental data. What follows is a critical review of this research.

2.1 Archival Research

Archival research investigating the idea of media suicide contagion has entailed using secondary archive data such as official suicide statistics and circulation or broadcast records for various media representations of suicide. The general objective has been to identify a possible statistical association

between media exposure to suicide and suicide. One of two methods of data analysis has been typically employed in this archival research, 'quasi-experimental' analysis and time-series regression. 'Quasi-experiments' have sought to retain the pro-directed and comparative nature of experimental design, but have used historical records indicative of naturally occurring variations in the independent variable, exposure to suicide, around which a comparative research design has been constructed. Specifically, this approach has involved identifying past variations in a measure of media exposure to suicide for a particular group or population, and testing whether a concomitant variation appears in archival measures of suicide. This has been done by generating expected levels for what 'should' appear in the suicide records from baseline forecasts generated from periods where the indicator of suicide exposure was normal and comparing these predictions with actual recorded levels. If the prediction is wrong, specifically if it is lower than the figure actually appearing in the suicide archive, then an influence of exposure may be inferred. An early illustration of this approach may serve to make this approach more clear.

The psychologist Jerome Motto (1967, 1970) suggested that if media representations of suicide did influence suicidality, then during newspaper blackouts suicide levels should drop. It is worth pointing out that this does not necessarily follow since, for example, media representations may be communicated through alternative media during such blackouts, or indeed there may be no suicides that would have been reported had the blackouts not occurred, but for the purposes of illustration of the quasi-experimental

approach, let us accept this hypothesis. Motto operationalised his research by first identifying periods in US cities where there were such press blackouts. He then looked at official records for suicide fatalities in these cities in similar periods in the preceding and following years to the blackout and, based on these, generated a prediction of what he expected the level to be during the period of the blackout in the intervening year. If the prediction was too high, then it could be inferred that the association was indicative of the influence of press publicity on suicide fatalities. This reasoning, similar to that used by Durkheim in *Le Suicide* based on concomitant variations in archival data is problematic on a number of levels, but before expressing these concerns, it is worth pointing out that the results of Motto's two studies were conflicting – in the former (1967), his prediction was not too high, therefore he concluded that no contagion had occurred, whereas in the latter (1970), his prediction was wrong, and therefore the error was interpreted as evidence for contagion. Attempts to replicate this archive-based quasi-experiment in other areas of the US have provided equally ambiguous results; Littman (1985) found his prediction to concur with official records, a sign of no contagion, while Blumenthal and Bergner (1973) found that their expectations of what should appear in New York female suicide fatality records were too high.

2.1.1 Some Problems with Archive-based Quasi-Experimental Evidence in Media Suicide Contagion research

Although the quasi-experimental analysis of archival data may obviate ethical problems involved with conducting prospective research into the idea of media suicide contagion, there are several rather serious shortcomings about the

approach that may be interpreted as rendering any inferences as to the influence of media publicity on suicide uncompelling.

First of all, even if one accepts that official records of suicide fatalities are accurate and that variations are not attributable to variations in how suicide is measured rather than variations in the incidence per se, the logical structure of the approach, in its own terms, appears flawed. Specifically, there is a problem involved with the level at which analysis is conducted; media suicide contagion refers to a phenomenon that occurs at the level of the individual, that an individual's exposure to suicide stories in the media influences that individual's suicidality. However, Motto's research was based on inferences made from aggregated population-level statistical associations between a rather poor indicator of population exposure to suicide publicity and subsequent levels of recorded suicide in that population. Making inferences about the meaning of statistical associations occurring at population level, involves committing what is known as the ecological fallacy, so called because it is quite possible that associations occurring at population level do not occur at the level of the individual (Robinson 1950, Poppel and Day 1996).

Secondly, and perhaps more fundamentally, there is no compelling reason to suggest that predictions that were too high were a consequence of fewer people being exposed to suicide, since the research provided no evidence that fewer people were mediately exposed to suicide during the newspaper strike. Crucially, there is no reason to suppose that some fatalities appearing in the suicide statistics during *non-blackout* periods used to generate predictions had

actually been exposed to media representations of suicide, for the simple reason that this information is not provided in the archival records.

Even if problems of inference raised by the ecological fallacy are bracketed, and even if it is supposed that those people actually appearing in the suicide statistics were differentially exposed to suicide, the inference of contagion still appears shaky. This is because any number of confounding variables, unavailable in the archival records but not discountable because of the lack of control over the independent variable, may have affected any variation in the suicide records. Additionally, the whole analysis rests upon the accuracy of arbitrary predictions about what would have appeared in suicide records had things have been different, specifically, no press blackout. Inferring contagion from differences from what might have happened but did not happen and what did happen seems to be highly speculative, particularly when the differences are between derivative measures that may be influenced by a large number of uncontrolled factors.

2.1.2 Triangulating Archive-based Quasi-Experiments: The Research Corpus of Sociologist D. P. Phillips

In an attempt to overcome some of the inherent weaknesses and ambiguities of this quasi-experimental approach using archival data, the sociologist David Phillips (1974, 1979, 1989), extended the technique to include the testing of a number of corollary hypotheses which when triangulated, that is, when each hypothesis was independently supportive of the central hypothesis, could be interpreted as reducing the likelihood of spuriousness in associations between suicide publicity and errors in predictions about what 'should' appear in offical

suicide records. Specifically, in what is one of the most frequently cited research reports on media suicide contagion, Phillips (1974) argued that if exposure to media representations of suicide influenced suicidality, then any excess in recorded suicide fatalities over predictions forecasted using this technique would be accompanied by three other measurable factors. Firstly, archival data of suicide fatalities should only exceed forecasts following, but not before, the dates of publicity surrounding a suicide. Secondly, the difference between expectations and the number of suicide fatality verdicts recorded should vary proportionally with the amount of media publicity devoted to the story. Finally, regional breakdowns in suicide records should show forecasts of what is expected to appear in suicide archives to be too low predominantly in the areas where the suicide is most highly publicised. Phillips argued that if records of suicide fatalities following suicide publicity were higher than his predictions based on similar periods with no suicide publicity, and if all these additional predictions were confirmed, then this would constitute more compelling evidence for the idea of media-induced imitative suicides.

Phillips operationalised his 1974 research by identifying the dates of front-page suicide stories in a leading US national daily newspaper (New York Times) during the post-war period 1947-1968. These dates were used to define the start of a set of experimental periods of one month in which media exposure to factual suicide stories was held to be high. Levels of official completed suicide verdicts in these experimental periods were then compared to control periods in the same month in adjacent years where no front-page

suicide stories appeared. The mean of the two control periods was taken to produce an expected completed suicide level for the experimental period that allowed for seasonal effects and linear trends. By comparing the forecast suicide levels with actual recorded levels, Phillips found that following 26 of the 33 suicide stories identified, the actual level of official suicide verdicts in the US was higher than he expected, by an average of 58 suicides. A binomial statistical test calculated that the probability of such a result arising by chance was very remote (p=0.00066) indicative of a highly significant association.

To reduce the risk of spuriousness, Phillips then tested each of his three additional hypotheses and found that:

- expected suicide levels were only higher in the month of the story and the month following the story, not the month before. Further, suicides occurring later in a month were followed by a greater increase in suicide levels during the subsequent month than for suicides occurring early in the month.

- the amount of publicity devoted to a story, measured in terms of the number of days (1-5) the story appeared on the front page of the New York Times or the New York Daily News[2] correlated positively with the size of the differential between forecast and recorded suicide levels. For example, front-page suicide stories lasting for 4 days were associated with differentials eight times the size of one

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[2] The New York Daily News, the most popular daily newspaper in the US was chosen as a measure of publicity because the duration of suicide stories in the Times did not vary significantly

day suicide stories. Differences between predictions and actual rates following suicide stories appearing on the front page of both papers were double the difference following suicide stories appearing in the Times alone.

· differences between forecasted and recorded suicide levels in New York following the suicide stories run in New York, but not in another leading non-New York daily (Chicago Tribune), were significantly higher than the differences between national expected and actual figures. Similarly, differences between predicted and actual records were lower in the UK following stories appearing in the New York Times but not the tabloid daily 'The Mirror'. Differences between predicted and actual records in the US were lower when the suicide story appeared in The Mirror but not the New York Times.

Phillips inferred from these results that the New York Times reports of suicide had triggered an increase in the level of recorded suicides. To investigate whether the recorded suicide clusters were simply the consequence of a possible influence of the media publicity on coroner misclassification of death, Phillips examined the various mortality statistics during the periods when actual levels were higher than he had predicted. If the increase had been due to coroner misclassification, he reasoned, then the increase in suicides would have been compensated by a fall in some other category of death. No evidence for any fall in accidental deaths, murders, or deaths of undetermined cause was found.

Phillips also dismissed another alternative explanation for his findings that front-page suicide stories and higher than predicted recorded suicide levels were both dependent variables of some other underlying factor. This interpretation was dismissed because the suicide stories were found to systematically antecede any excess over predicted levels.

In an investigation of possible mechanism of how the influence manifested itself, Phillips rejected the notion that deviations from his baseline predictions were the product of increased grief resulting from exposure to suicide stories. This possibility was rejected firstly because very few of the suicides reported were of admired and appreciated individuals; in fact many were criminals, and secondly because a parallel analysis of official recorded suicide levels following the death of US presidents found that recorded levels were in line with predictions.

Finally, Phillips sought to discount the possibility that deviations from his forecasts were a freak of idiosyncrasies in US suicide statistics, and he did this by replicating his central finding in the UK. Official UK records of completed suicides were, on average, 14% higher than his predictions following suicide news stories appearing in the daily newspaper *The Mirror* between 1956 and 1967.

Phillips concluded his 1974 paper arguing even more controversially that his data indicated that exposure to media publicity about suicides was a generative rather than a precipitative cause of suicide, that is, newspaper suicide reports caused suicides that would not have otherwise occurred. Phillips reached this conclusion by extending his forecasts beyond an

immediate post publicity period. He argued that if the media-induced imitative suicides that he claimed to have identified were precipitated by the media, then there should be a dip in recorded suicide levels relative to predicted levels following the peak, as suicides were moved forward, that is, precipitated by media publicity. In other words, after being too low, the expectation was that his predictions would be too high. However, Phillips found no evidence for such an expected dip in suicide levels, and concluded from this that the media reports generated extra suicides that would not otherwise have occurred.

In sum, Phillips claimed that his research provided compelling evidence that publicised suicide stories in newspapers do trigger suicides. In a subsequent similar study with Bollen (Bollen and Phillips 1982), this claim was extended to the effect of television news stories of suicide. Using daily records of US suicides instead of the monthly records used in the 1974 study, the authors inferred from inaccuracies in their quasi-experimental forecasts that evening national television news suicide stories (ABC, CBS and NBC) between 1972 and 1976 also triggered suicide fatalities. They did this in the following way. By eliminating news stories falling around public holidays because of any potential effect of public holidays on suicide, the researchers found that suicide levels were generally greater in the week following the suicide story (experimental period) than predictions made from records for the week before the story (the control period). On average, their predictions were some 35 suicides too low in the week following the first day of the television publicity, with the greatest discrepancy between their forecasts and archive entries

occurring on the first day following the story (5-10% increase) then again six days later (12% increase).

Many of the problems noted above with this sort of quasi-experimental reasoning apply to Phillips' research, despite the investigation of corollary hypotheses. But before providing a critique of his interpretation of the data, it is relevant to note several further similar studies focusing on media suicide contagion conducted by Phillips because they bring into particularly sharp relief some of the problems with this approach.

2.1.3 Covert Suicides and Contagion

Phillips provided four further sets of results using this quasi-experimental approach to suggest that media representations of suicide can cause suicide. Firstly, Phillips (1979) argued that since it may be difficult, if not impossible, to know whether fatal car accidents are intentional or accidental, it follows that some suicides by car crash are liable to be classified as accidents. Therefore, he suggested that following heavily publicised suicide news stories, archive data of motor vehicle accident fatalities (MVAF) should be significantly higher than predictions forecast from baseline control periods. Comparing Californian daily car fatality levels (1966-1973) in the week following front-page suicide stories in top Californian daily newspapers, with forecasts generated from four control periods matched by day, month, and public holiday, when no such stories were reported, Phillips tested this hypothesis. He found that his predictions were systematically too low during the week following suicide news stories; on average by 9%. Additionally, the discrepancy between predictions and records only seemed to occur following

the publicity and not before it, with the widest difference between the two occurring on the third day following the first day of the story when, he found, fatal accident levels were on average 31% higher than predicted. This finding was replicated in a subsequent MVAF/suicide story study in Detroit where Bollen and Phillips (1981) found that:

· the more publicity devoted to a story, the greater the difference between predictions and archive data. A publicity index, calculated by the sum of circulation figures multiplied by the number of days the story had front-page coverage for major daily newspapers, correlated positively and significantly to the level of increase in fatalities. Predictions following stories receiving more than the median level of publicity were on average 19% too low, while for those receiving less than the median predictions were consistent with the archive data

· when fatalities were split up into multiple vehicle fatalities and single vehicle fatalities, only single vehicle fatalities figures were significantly different from expectations. However, following reports of murder-suicide stories involving an individual who kills others and then themselves, predicted levels of multiple vehicle crash fatalities were significantly lower than archive data.

· records of car fatality victims indicated that they tended to die significantly more quickly (1 day following crash) following suicide stories than during the control period (4 days following crash), perhaps indicative of a desire to die. Further, the age of drivers in

single vehicle fatalities in the experimental period was found to be more similar than expected to the age of the publicised suicide victim.

· forecasts of car fatalities that were significantly lower than official records occurred primarily in the area where the story was most highly publicised. For example, MVAFs were higher than predicted in Los Angeles but not San Francisco after a story was published in Los Angeles, but not San Francisco, and MVAFs were higher than forecasted in San Francisco, but not Los Angeles, following a story published in San Francisco but not Los Angeles.

Extending the rationale of covert suicides used in the MVAF studies, Phillips (1980) hypothesised that highly publicised murder-suicide news stories, involving a murder and then the suicide of the murderer, might trigger multi-fatality *aeroplane* crashes, but not single fatality aeroplane crashes. Essentially his hypothesis was that some pilots might ape these murder-suicide stories by crashing their planes with passengers on board. Using front page murder-suicide stories in the Los Angeles Times, the New York Times, and evening news murder-suicide stories on ABC, CBS and NBC television networks between 1968-1973 as an indication of increased exposure to murder-suicides, Phillips found that multiple death non-commercial aeroplane crashes were higher than he predicted following murder-suicide stories, but single-death crashes were not. Consistent with the 1979 study, the largest discrepancy between forecasts and archive records occurred in the area where the suicide stories were most publicised. Finally, Phillips found that the

more newspaper publicity devoted to the story, the greater the association between the publicity and plane crashes.

Extending this analysis to commercial plane crashes, Phillips (1980) found that in 'experimental' periods occurring 0-7 days following murder-suicide front-page stories (1950-1973) in the New York or Los Angeles Times, the number of US crashes was significantly higher than he predicted from control periods designated as –1 to –8 days before the publication of the stories. As with the non-commercial crashes, the amount of publicity dedicated to the story correlated positively to the number of commercial airline crashes, and the average fatalities per crash were on average higher in experimental groups than in the control groups (27 vs. 8).

Finally, Phillips (1982) used the same archival approach to investigate whether fictional television stories appeared to trigger an increase in completed suicides that had either been classified as suicides or misclassified as fatal car accidents. To do this, he compared 1977 US daily suicide records and fatal and non-fatal car accident levels in 9 experimental periods of one week following the national television broadcast of soap operas involving fatal (n=2) and non-fatal (n=11) suicide attempts of one of the protagonists with predictions based on suicide and car fatality records in the week preceding the broadcasts. As expected, Phillips found that his predictions were significantly lower than figures appearing in the archive data for both suicide fatalities and fatal car accidents.

A summary of Phillips' empirical research findings using this archive-based experimental approach can be found below:

· suicide levels were higher than forecast following, and not before, suicide news stories appearing in daily newspapers and evening television news reports, and were so in a manner proportional to publicity devoted to the suicide story (Phillips 1974, Bollen and Phillips 1982)

  o the differential between predictions and official records occurred primarily in the geographical area where the suicide story was published (Phillips 1974)

· motor vehicle accident fatality levels were significantly higher than predicted following, and not before, suicide news stories publicised in daily newspapers, and were so in a manner proportional to publicity devoted to the suicide story (Phillips 1979, Bollen and Phillips 1981)

  o differences between forecasts and records were largest for single vehicle fatalities, compared to other types of road accidents following suicide stories, and the age of the drivers was more likely than forecast to be similar to the age of the publicised suicide victim (Phillips 1979)

· fictional television suicide stories, occurring at different periods to suicide new stories were also followed by higher than expected level of recorded car fatalities (Phillips 1982)

· multi-fatality commercial and non-commercial aeroplane crashes were higher than predicted following publicised suicide stories and

were so in a manner proportional to publicity devoted to the suicide story (Phillips 1980)

- o the lethality of the crashes was higher following the murder-suicide stories than for other crashes

2.1.4 Problems with Phillips' Archive-based Quasi-Experiments

Despite the consistency of Phillips' findings that his forecasts of official suicide records were systematically too low and, despite the imaginative use of archival data to make inferences about the unlikelihood of alternative interpretations of the data, the weaknesses of the quasi-experimental analysis of aggregated archival data noted above were not addressed. Specifically, Phillips was making individual level inferences from group level data that may have been spurious, as well as assuming, with no supporting evidence, that the individuals making up the difference between his predictions and actual levels of suicide in official records had actually been exposed to the media suicide reports. Further, the paucity of information in suicide archives did not allow for other variables to be discounted; it is perfectly possible, for example, that variable weather conditions could have explained differences between forecasts and car accident fatalities. Even if Phillips' inferences are accepted at face value, his interpretation of media contagion does not even seem to account for his own data which showed that his predictions were significantly wrong only on certain days, such as the third or sixth day following the first day of the publicity. Why, for example, should people ape suicides reported in the press only on certain days following the publicity?

Phillips testing of corollary hypotheses may have arguably reduced somewhat the risks of false inference from erroneous predictions about the contents of archival suicide data following the dates of media suicide representations. However, the crudeness of the data used and the relatively unsophisticated method of generating predictions from neighbouring entries in archives of suicide fatalities meant that any significant finding was dependent on the error margin in these variables. For example, when Kessler and Stipp (1984) corrected for a number of minor errors in programming dates and subjected Phillips' 1982 data to time-series regression, as opposed to quasi-experimental analysis, they found no significant effect. The statistical association had been the product of inaccuracies of measurement and the way that the quasi-experimental approach only made partial use of the data to generate expected suicide levels using a small number of control points.

The quasi-experimental approach with its use of only a few data points to generate expected levels of suicide, meant that any controls for cyclical and trend variables, such as the business cycle and unemployment rate, were very weak if not non-existent. Wasserman (1984) subjected Phillips' 1974 data to a time-series analysis, a technique that generates predicted levels of suicide from the whole data set and allowing the dataset to be corrected for chosen variables, such as business cycle, war and seasonality. Wasserman found, using this alternative statistical analysis, that there were no overall significant differences between forecasts and what actually appeared in suicide archives. Similarly, Jonas (1992) was able to show that while a quasi-experimental analysis of archival data of suicidal fatalities following press publicity of

suicides in Germany between 1968-1980 yielded results continuous with contagion, when the data was subjected to time-series analysis that corrected for seasonality, no general association consistent with contagion was found. In fact, both Wasserman and Jonas were only able to show weak statistical correlations between suicide publicity and suicide fatality archives for a subset of suicide stories around individuals they defined as celebrities.

A further problem with interpreting concomitant variations between archival suicide records and the times of suicide publicity is that this historical approach does not allow for the research to be replicated and, therefore, it is not possible to discount the possibility, even if the general research design is accepted as legitimate, that any weak associations are not simply a function of idiosyncrasies in the records to which no meaningful interpretation applies. Here, however, it is relevant to note that one quasi-experimental analysis conducted in Germany, not on media suicide contagion per se, but on the possible media influence on the choice of suicide method, did partially address this weakness by assessing the influence of a repeat showing of a fictional television suicide story. In this study, a repeat broadcast of a six-part fictional train-suicide story called 'Death of a Student' in 1981 and 1982 allowed Schmidtke and Häfner (1988), to assess, quasi-experimentally, any influence in the choice of suicide method adopted that this story may have had. In both series, they found that their predicted levels of train suicides were too low. This 'effect' persisted when the forecasts were generated using time-series regression, and the authors inferred from higher than expected numbers of

train suicides appearing in suicide archives following broadcasts that the story had had a qualitative influence on how suicides were manifested.

2.2 Time-Series Analysis of Archival Data

As the Schmidtke and Häfner study showed, not all alternative time-series analyses of archival data have produced results at odds with Phillips' original quasi-experimental findings. For example, Bollen and Phillips (1982) themselves subjected an extended data set from their 1974 study using daily suicide records to time-series analysis. Using dummy variables to control for day of the week, month, year and public holidays, they still found that their predicted levels of suicide were significantly lower than the figures appearing in suicide archives. Specifically, they found statistically significant deviations 0-1 days and 6-7 days following the first publication of newspaper suicide stories. Overall, they found that their predictions generated from time-series regression were on average 28 suicides too low in periods of up to ten days following the records of the start of publicity. Using this approach on the 1979 'hidden suicide' car fatality study data set, Bollen and Phillips produced results also consistent with their original findings, identifying 'effects' of news report on archives of road accidents for up to a 10-day duration. In a subsequent study using this time-series approach, but this time focusing on associations between dates of US national television news television and official records of teenage suicides between 1973-1979, Phillips and Carstensen (1988) also found time-series forecasts to be significantly too low.

However, other research using this times-series analysis of archival data found no expected differences between predictions and records. For example,

Stack (1983) found that one of the most mediatised suicide events to date, the 1978 Jonestown mass suicide of 900 persons in Guyana was not followed by a discrepancy between predicted and actual levels of US suicide records when the data was corrected for autocorrelation and trending. Neither was there any significant correlation between the time devoted to suicide news stories on US national television and monthly suicide levels between 1974 and 1980 (Horton and Stack 1984). Other research only found unexpectedly elevated entries in suicide records through selective data-trawling, using only a subset of suicide stories as independent variables. For example, following Wasserman's study (1984), some studies found that levels of suicide in official records were higher than predictions based on time-series regression only around the dates of celebrity suicides (Stack 1987, c.f. 1990, Kessler, Downey, Stipp and Milavsky 1989). Another study could only find significant discrepancies between forecast dates and actual entries in US suicide archives during the Great Depression if the dates of suicides of politicians were taken rather than celebrities (Stack 1992). A similar difference between predictions and actual US records could also only be produced if all suicide stories, except those pertaining to individuals known to be having relationship problems, were excluded from the analysis (Stack 1990a). Finally, only by excluding the dates around reported suicides in Japan of all suicides, except those of Japanese nationals could unexpected differences between predictions and Japanese suicide records be found (Stack 1996).

2.2.1 Additional Problems with Time-series Analysis of Archival Data: Contradictions and Bogus Contagion

It is important to note that any extra predictive power that time-series statistical regression may have over quasi-experimental analysis does not resolve the problems of ambiguity and possible spuriousness of group level associations between unrelated archival data sets. In fact, in a subsequent critique of Phillips' use of such time-series analyses of archival data to support the media contagion hypothesis, Baron and Reiss (1985a, 1985b) have suggested that such an approach is arguably less compelling than the original quasi-experimental findings because of the possibility of inferences being drawn from meaningless statistical artefacts. To demonstrate this, in what may be seen as a rather compelling way, Baron and Reiss picked at random a number of dates of imaginary suicides that were obviously not publicised (because they did not occur), and found that the imaginary publicity following these imaginary suicides had a significant 'effect' on levels of suicide recorded in US national archives. In effect, they showed that, by adopting Phillips' rationale, products of their imagination, bogus suicide stories, appeared to trigger suicides. They also were able to show that media representations of boxing matches appeared to trigger homicides not only immediately after broadcasts, as Phillips had also controversially suggested (Phillips 1983), but a year later on the anniversary of the broadcast. That imaginary suicide publicity can be significantly associated with higher than expected recorded suicides levels, and that televised boxing matches can be associated with rises in homicide on anniversaries of the matches is perhaps the most telling criticism of such

correlational studies between aggregate measures of suicide publicity and suicide clusters purporting to be evidence of suicide contagion. In sum, the spuriousness of such associations can be interpreted as critically undermining the approach.

2.3 Survey Research

If statistical manipulations of unrelated group-level archival data have provided for conflicting, ambiguous and generally uncompelling inferences about the empirical plausibility of media suicide contagion, the statistical manipulation of the limited amount of survey data that has been generated to investigate the phenomenon has produced little more in the way of compelling evidence. Survey research into media suicide contagion has been conducted using the same quasi-experimental or time-series analysis as the archival research described above, but using primary data collected through surveys. For example, Gould and Shaffer (1986) collected survey data from participating hospitals in New York that recorded admittances for suicide attempts[3] two weeks before and after each episode of four fictional television suicide stories in 1984 and 1985. Using this data, they were able to show that projected suicide levels from the preceding 'control' period to the subsequent 'experimental' period were too low, as were projections from official New York records of completed suicides. However, and critically, the research did not establish whether any of the suicides, attempted or completed, were anteceded by exposure to the media representations. Additionally, attempts

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[3] 'A life threatening act performed with the stated intent of jeopardising the person's own life or given the appearance of doing so'.

to replicate this study in other areas in the US produced conflicting results, with some not finding any discrepancy between predictions and actual findings (Phillips and Paight 1987, Berman 1988), while another could only find discrepancies in some selective subsets of the data (Gould, Shaffer and Kleinman 1988).

Another survey-based study using this quasi-experimental approach in England produced yet more ambiguous results. The research focused on the possibility that a 1986 episode of the popular soap opera *Eastenders* involving an attempted suicide influenced some people's decision to attempt suicide themselves (Platt 1989). To operationalise this survey research, Platt (1989) sent out a standard definition of an attempted suicide to 63 participating hospitals prior to the broadcast. With this definition was attached a questionnaire that asked for daily admission figures for attempts to be recorded by age and sex during a five-week period including an experimental period of one week following the broadcast and a control period of one week before the broadcast. Predictions were made from the data collected in the control periods for expected levels of admissions during the experimental period. Platt found that there was no overall difference between forecasted and survey results, but he did find a discrepancy in some subsections of the data, for example, for people over 45 and for women. However, Platt concluded, consistent with the interpretation of the research provided here, that this did not represent compelling evidence for contagion, rather he suggested that the partial and weak associations found were more likely a 'rogue of freak result [sic]', and that the general idea of media suicide

contagion remained 'case unproven'. Additionally, from the interpretation offered here, even had the survey data been consistent with expectations, the inference from differences in forecasts and actual aggregated levels in this survey would have been no more compelling than the archival research because there was no evidence that the derived increase was made up of people who had actually seen the *Eastenders* episode. In other words, presence of the independent variable upon which the whole analysis, as with the archival research, depended, was not unambiguously established in this study.

Before leaving this correlational approach that has yielded somewhat ambiguous and conflicting results, it is relevant to note a very recently published piece of research that for the first time has sought, albeit indirectly, to establish whether or not those people appearing in the suicide data had actually been exposed to a suicide representation. This research sought to assess the influence of a media representation of a deliberate self-poisoning, a paracetamol overdose, in a 1996 episode of a medical soap opera *Casualty* in the UK (Hawton, Simkin, Deeks, O'Connor, Keem, Altman, Philo and Bulstrode 1999). A similar study in Oxford, assessing any influence of similar overdose representation in an earlier Casualty episode in 1993 had failed to find any discrepancy between predictions based on time-series regression and actual admissions for overdoses (Simkin, Hawton, Whitehead, Fagg, and Eagle 1995). However, in this more recent research based on national survey data, such a discrepancy was found. In this study, incidence data was collected for self-poisoning admissions from 49 participating Accident and

Emergency Departments in the UK, and 25 of these hospitals also administered patient questionnaires to those that had taken an overdose. A time-series regression found that admission levels were higher than expected following the episode. What was particularly significant about this research was that an analysis of the questionnaire data revealed that of those who participated in the survey, 20% of the suicide attempters presenting in the week following the broadcast claimed that their decision to take an overdose had been influenced by the story, and 17% claimed the programme had affected their choice of drug.

Despite this one single finding that was able to tie suicide exposure to suicidal actions, overall, the case for media suicide contagion based on archival and survey evidence is weak, conflicting and ambiguous. From the reading taken here, it certainly does not constitute compelling evidence that exposure to media representations of suicide can influence suicide decisions. Perhaps more compelling evidence can be found in the more limited corpus of research that has generated data experimentally to investigate the empirical plausibility of media suicide contagion. It is to this research that we will now turn.

2.4 Experimental Research

An inspection of prospective, that is pro-directed archival and survey research into media suicide contagion reveals inconsistent and ambiguous results. Much of this ambiguity may be understood as a function of the lack of internal validity that follows from conducting the research using crude aggregated measures at the level of the group for a phenomenon that putatively occurs at the level of the individual. To reiterate, media suicide contagion refers to a supposed influence of experiencing a suicide representation on suicidality and, since individual experience of media representations and suicidal actions occur at the level of the individual, then unless the research is conducted at that level the research will suffer from severe problems of internal validity. At the very least, research should be able to establish whether or not the individuals appearing in the analysis actually experienced a media suicide representation prior to their suicidal actions. None of the archival research reviewed above and virtually none of the survey research to date has been able to do this.

How then can research into the idea of media suicide contagion progress? As noted above, retrospective reports that seek to make ex-post facto inferences *to* a putative source of influence *from* the predicted effect of such influence, suffer from similar problems of internal validity because other influences are difficult if not impossible to discount. This leaves the researcher interested in assessing the empirical plausibility of media suicide contagion with a remaining alternative: generating research data experimentally.

Experimental research relevant to media suicide contagion research has been operationalised in three ways; field experiments have sought to investigate any measurable influence of exposure to media suicide representations on suicide in the 'field', that is, in the context within which exposure to suicide representations would naturally occur. Alternatively, laboratory experiments have sought to control extraneous influences by randomly assigning participants to experimental and control groups while controlling the context in which exposure occurs. Finally, natural experiments have sought to exploit naturally occurring differential exposure to media suicide representations, that is, the independent variable, and measure any difference in outcomes in the dependent variable, suicidality. A basic rationale of experimental design is common to each of these variations. By comparing measures of suicidality between groups or over time following differential exposure to media suicide representations, the empirical plausibility of any influence may be assessed.

Laboratory experiments have the advantage of good *internal validity* insofar as alternative interpretations of the findings themselves can usually be discounted because variables other than the independent variable are controlled for by conducting the research in a controlled environment. However, for the same reason that internal validity is high, *external validity* of laboratory experiments may be seen as low, where external validity refers to the relevance of findings in the artificial research context to the external, uncontrolled world. Field experiments suffer from precisely the opposite problem where gains in external validity may be offset against a loss in internal validity occurring through an inability to control extraneous factors in

the 'field'. Finally, natural experiments critically exacerbate the problem of internal validity of field experiments by not having any control over who experiences what, with the implication that the direction of any influence cannot be established. Further, natural experiments suffer from the weakness of not being replicable, meaning that findings cannot normally be subject to falsification. On the other hand, an advantage of natural experiments, and one which is particularly pertinent to any investigation of media suicide contagion, is the very point that exposure is not manipulated by the researcher. The relevance of this to the current research problem is obvious. If the researcher was to deliberately expose people to media suicide representations who would not otherwise experience them in the full expectation that this could have some pro-suicidal influence, then the research could be partly responsible for any subsequent distress or ultimate suicide among participants. For sceptics of the idea of media suicide contagion, the unlikelihood of such an outcome might perhaps be enough to dismiss such ethical qualms, and therefore warrant the deliberate exposure of people to suicide representations in an attempt to falsify the media contagion hypothesis. The stance that will be adopted in this project will be that such an approach is not permissible, even if the risks are tiny. Exposing people to media suicide representations, who otherwise would not experience them in the context of a research project investigating the idea that such representations may influence suicidality, raises an ethical problem that precludes such non-natural experimental research.

Of the limited experimental research that has taken place on the empirical plausibility of media suicide contagion, only one study has adopted a natural experimental design, and this study was also the only one to be conducted in the field. This study, conducted by Jackson and Potkay (1974), sought to identify any measurable influence of a one-act play about suicide, called Quiet Cries, on US college students. Specifically, the researchers sought to identify whether the play appeared to influence the students' perceptions of suicide relating to their own suicide. Questionnaires administered to the audience were completed before and after the play, and perceptions of suicide were not found to have changed significantly after the play, and thus the researchers concluded that it was unlikely that the representation had had any influence on suicidality of the audience.

What is immediately apparent from this early research is a dislocation with the previous behaviourist research discussed above that has focused exclusively on behavioural manifestations of suicide. Within an experimental context, it would not have been practically possible, nor desirable, to isolate all those who had seen the play from other suicide influences for an extended period of time, measure the level of suicide acts and compare this to some similar control group who had not seen the play. For this reason, the experimental research was confined to exploring the influence on ideational aspects of suicide. For behaviourists, such research may be seen as ineffectual, of little use in establishing the plausibility of the idea that media representations can influence suicidality, *qua* fatal self-killing. For example, it might be suggested that simply because the researchers measured no change in prompted verbal

behaviour around suicide in the context of such research, this does not discount the possibility of a subsequent increase in the incidence of suicide behaviour. Equally, had a change in perceptions in suicide been measured, this would not represent from a behaviourist perspective any change in suicidal phenomena, qua self-killing.

The response to this behaviourist position follows from the understanding of suicide provided in the introduction. Without a motivational component, suicide is reduced to behavioural gestures continuous with self-killing. Suicide, as conceptualised here, refers precisely to a particular motivational state whose object of focus is self-inflicted death. From this perspective, Jackson and Potkay's research was valid insofar as any *suicide* contagion must be grounded in a change in motivations around suicide. If copying gestures continuous with suicide occurs without any change in motivations underpinning such copying, then media suicide contagion has not occurred. Equally, since suicide may be defined motivationally, any change in suicide motivations following exposure to the play would have been indicative of media suicide contagion. Of course, any influence of media representations on ideational aspects of suicide, does not mean that any behavioural influence will follow, merely that such a change must occur if behavioural influence is to be understood as suicidal. As it happens, Jackson and Potkay found no measurable change in ideational aspects of suicide, and therefore the results of the study may be interpreted as not being supportive of the contagion hypothesis.

The weakness, noted above, of such a natural experiment design used to investigate the putative influence of media representations of suicide on ideational aspects of suicide, is that studies cannot be replicated in order to assess the reliability of the results because the researcher constructs the research around a unique constellation of naturally occurring events. Further, the very possibility of conducting any such research is dependent on the natural occurrence of exposure to media suicide, something that is infrequent, rendering the approach less than practicable.

An alternative approach, based on a laboratory experimental design, has been adopted in a series of studies conducted by Lillian Range and colleagues (Range, Goggin and Steede 1988, McDonald and Range 1990, Gibson and Range 1991, Higgins and Range 1996, Steede and Range 1989). Because of the ethical problems noted above surrounding research in which individuals are deliberately exposed to media representations of suicide in order to measure influence on aspects of suicidality, Range et al. modified their research to minimise any such possibility. In particular, instead of directly exposing participants, who were students, to media representations of suicide, participants were exposed to a text or film describing a stressed young person. An experimental group of participants were told that the subject of the representation knew somebody who had recently committed suicide, while those in a control group were not told this extra element of information. Participants in both groups were then asked how likely, on an ordinal scale, they thought it was likely that the represented individual had or would commit suicide. Alternatively participants were asked to indicate how likely they

thought it was that they themselves would commit suicide if they found themselves in a similar situation to that of the represented individual.

By comparing the results between the two groups, the researchers were able to investigate whether exposure to information about suicide influences expectations that suicide will occur. The advantage of this approach was that the researchers could measure the predicted contagion effects of exposure to suicide without actually exposing participants to suicide, because the suicide was merely indirectly referred to as opposed to being explicitly represented. This allowed the research to proceed with some degree of internal validity within a safe, replicable, and flexible framework. Specifically, the research that did not invoke the ethical problems of deliberately exposing individuals to suicide representations, which would have raised the possibility of the research becoming instrumental in future suicides. However, the clear disadvantage of the approach was that it measured expectations of contagion and not contagion itself, with the consequences that any external validity pertaining to contagion would be highly speculative if not critically compromised.

Of the five studies conducted using this indirect approach, only two produced any evidence that could be interpreted as suggestive of suicide contagion. In the first study, Range, Goggin and Steede (1988) found college students, told that an individual in a video story knew of someone who had committed suicide, were more likely to say that they would have committed suicide if they had been that individual than were other college students not told that the individual knew of someone who had committed suicide. However, when the

research was replicated with younger high school students, Steede and Range (1989) found no differences in personal suicide expectations. Similarly, when high school students were exposed to a text describing a distressed adolescent, John, who knew of a high-schooler who had died by suicide (or viral illness in the control case), McDonald and Range (1990) found that exposure to information about suicide was not significantly associated with difference in suicide expectations. However, expectations that John would take his own life were lower than expected when John had heard of an unsympathetic response to the adolescent's suicide, a finding that could be interpreted as weak evidence that portraying the negative consequences of suicide may have some deterrent effect.

A larger study by Gibson and Range (1991), involving 128 high school students measuring expectations that others would be affected by contagion, found that students who were exposed to a text describing a stressed individual who knew of a student with similar problems who had committed suicide tended to think that the individual was more likely to commit suicide than those reading a similar text without mention of suicide. Interestingly, a third text portraying the individual as knowing of somebody in a similar situation who had sought psychiatric help, resulted in higher than expected predictions that the individual would themselves seek help, a finding that could be interpreted as indicative of a potential role of the media in suggesting alternatives to suicide.

Finally, in an attempt to identify some variables that might affect the extent to which expectation of suicide contagion occurred, Higgins and Range (1996)

examined the effect of labelling suicide victims positively or negatively on expectations of contagion in 306 college students. No significant results were found, and the researchers found no difference in effect of between negative portrayals (psychiatrically disturbed, romantic break up, parents' divorce, alcohol problems) or positive portrayals (honours student, varsity athlete) of suicide victims in expectations that suicide would occur.

The following section will attempt to draw this experimental evidence together with the archival and survey research reviewed, and propose an interim verdict on whether the idea of media suicide contagion is empirically plausible.

3.0 The Empirical Case for Media Suicide Contagion: an Interim Verdict and some Recommendations

Is media suicide contagion fact or fiction? Or, more properly, is there any compelling evidence to suggest that media representations of suicide can influence suicidality, in either its ideational or behavioural manifestations? A cautious but fair analysis of the evidence gathered to date does not warrant a reply in the affirmative. The majority of research results have only been vaguely suggestive of the idea that for some people, in some situations, exposure to suicide may possibly have some influence on suicidality. Archival and survey research has been conducted in a way that has made it impossible to tell whether those people acting suicidally subsequent to *possible* exposure to media suicide representation did actually experience these representations. Analysis carried out at the level of the individual has been restricted, by necessity, to a focus on a possible ideational influence in an indirect approach in which individuals were not actually exposed to the putative source of influence, the independent variable to which. This research has failed to produce evidence for media suicide contagion, with the ambiguous and conflicting findings rendered more problematic because of the invasive and artificial research context.

Despite this interim negative conclusion drawn from a critical view of research into the possibility of media suicide contagion, it is important to point out that neither is there any compelling evidence to suggest that media suicide representations do not influence suicidality. Indeed, the ambiguous and

conflicting data means it is conceivable that exposure to suicide representations might have some kind of innoculatory or inhibitory effect on suicidality. For example, a 'catharsis' or sublimation model of media effects developed in the 1950s (e.g. Feshbach 1965) applied to the current issue might suggest that people might vicariously live out suicidal impulses and intentions through the media, endowing the media with such an innoculatory role. However, the central point here is that the data generated to date does not allow the researcher or health professional to assess the empirical plausibility in any compelling fashion of whether media representations of suicide might influence suicide.

Apart from this cautious conclusion, what lessons can be drawn from this review that might usefully inform future research, including that which will take place in subsequent sections of this report? Firstly, it would seem that the research should, at the very least, ensure that its focus is on the potential influence of exposure to media representations of suicide on suicidality, specifically that any measure of outcomes adopted should be unambiguously associated with exposure to a suicide representation. This would mean that research might be obliged to move beyond the use of archival data because information on exposure to suicide is not included in archival data pertaining to suicide. Similarly, problems of backwards inference from effect to cause in a past environment about which there are only sketchy records, would mean that more compelling research would have to be pro-directed, ensuring that exposure had occurred while allowing for a discounting of alternative interpretations pertaining to the impact of extraneous variables.

Although such a shift to pro-directed research using data generated specifically for the research task at hand might provide for results that have an enhanced degree of internal validity, it is relevant to note several shortcomings associated with such a move. Firstly, it is difficult to see how such research could focus on the influence of media representations of suicide based on anything other than ideational manifestations of suicidality. This is because any pro-directed investigation into media suicide contagion would be morally obliged to intervene if there was any sign that exposure to a suicide representation was likely to have any behavioural effect, before it did so, by a sensitivity to signs that the exposed individual is considering suicide. This somewhat emasculates the potential of research into media suicide contagion, and leaves it open to the criticism that while research findings might indicate that media representations of suicide could appear to have some influence on ideational manifestations of suicide, this does not mean that they have any behavioural impact. It is certainly the case that grand causal statements about whether or not a particular suicide act was partially caused by media representations would be precluded from a pro-directed research strategy. However, the more modest approach suggested here is that such an approach would provide some indication of the usefulness of interpreting suicide as influenced by media representations of suicide because suicide ideation is a necessary component of suicide. At present, there is no evidence to suggest that media representations have any such ideational influence, and if research could provide some indication that such an influence

did appear to occur, then the media suicide contagion hypothesis would become all the more plausible.

However, even within the more modest research approach recommended here, a significant ethical problem remains. By conducting pro-directed research into the putative influence of media suicide representations on ideational aspects of suicidality, the researcher, by manipulating the independent variable, may be contributing to the distress and, ultimately, perhaps the death of research participants. The partial solution proposed by Range to this dilemma, in which participants are not actually exposed to media representations of suicide is unsatisfactory because the very object of research is to assess the impact of such exposure. An alternative solution to this dilemma will be developed below, which integrates aspects of natural experimental and field experimental design within the context of new media that goes some way in circumventing this ethical problem. Here, the point to be made is that simply shifting from a behaviourist research focus to a focus on ideational aspects of media suicide contagion does not, in itself, resolve the ethical dilemmas involved with such research.

A second insight that may be drawn from the foregoing review is that research to date has been atheoretical. Rather than assess the utility of a theoretical model of media suicide contagion by making theoretically informed predictions that explore aspects of some specific theoretical mechanism, suicide contagion research has focused almost exclusively on producing, or often failing to produce, weak associations between derivative indicators of levels of possible exposure to suicide and levels of suicidality in areas where some

people *might* have been exposed. This crude empiricism, conducted in a theoretical vacuum, has proceeded without any theoretical framework to either guide investigation or interpret results. This is a crucial problem because progressing beyond a polemic sterile 'yes-no' debate is dependent on having meaningful and constructive results in the context of theory. Even if findings of research, positive or negative could be replicated with some kind of consistency, and even if the ambiguity of findings could be reduced, atheoretic results would still be less than compelling because brute associations provide no understanding of the nature of the mechanism underpinning the association. Such an understanding is necessary because otherwise any observed relationship may be quite irrelevant, or a function of some other variable, providing no more insight than the claim that men who take the contraceptive pill do not get pregnant, or that ambulances attending suicide attempts are associated with high levels of fatality. The general point is that unless some model is specified that guides and provides an interpretive framework, crude statistical inferences invite spurious inference and misinterpretation.

A further consequence of conducting empirical research into media suicide contagion in a theoretical void is that any ambiguous correlations found may themselves be suspect because there is no theory to specify the associated variables to make specific predictions. For example, unexpected associations between the dates of suicide publicity and certain daily entries in suicide archives used in Phillips' research can only be found on certain dates. The problem here is that there is no rationale or reason for interpreting the

inference that some people appear to ape suicides they see on a screen or in print, by crashing a plane, car or committing suicide with a delay of one, three, or six days. No organised set of hypotheses has been developed to suggest why people should kill themselves after seeing or hearing stories about other people killing themselves on these days as opposed to days two, four or five (cf. Baron and Reiss 1985a, 1985b). Indeed, the current state of theory in suicide contagion research is perhaps best characterised by sociologist David Phillips' (1980) lament that in the absence of an available theory, researchers investigating media suicide contagion might do well to take the contagion metaphor literally, and organise their research as if they were virologists. Suicide, from this perspective would be taken to be, quite literally, a contagious pathogen – a 'social virus'. If suicide is considered in this way, Phillips has suggested, then the research framework of virology may be imported *en-bloc* to organise, guide and interpret suicide contagion research. For instance, research might seek to measure such variables and dynamics as the incubation time between exposure and suicide, the specificity or diffuseness of the contagion, the possibility and mechanics of immunisation, group susceptibility, channels of infection, and the effects of censorship/quarantine. As far as it goes, this might be a possible way to proceed, but it does not amount to a theory of suicide contagion; it neither specifies a theoretical mechanism through which ideas such as suicide might spread, nor does it provide any clue as to where such a mechanism might be found. Virologists can place a viral contagion under a microscope and observe the mechanism of ribonucleic acid reproduction, and make

predictions based on this mechanism. Social scientists cannot yet catch an idea of suicide and place it under a microscope to identify any such mechanism.

It is the case that elsewhere in the research literature, a number of speculative theoretical suggestions have been proposed that might account for media suicide contagion, although this has more often than not been presented as afterthought or foreword to the presentation of some empirical association that could be interpreted as continuous with a media influencing effect on suicide. For example, Phillips has also suggested that anomic individuals, that is, those suffering from a sense of normlessness might have a general tendency to ape behaviour to which they are exposed (e.g. Phillips 1979, Bollen and Phillips 1982). Similarly, Häfner and Schmidke (1989) have made a passing reference to a 'uses and gratifications' model of media usage (cf. Katz, Blumer and Gurevitch 1974, see below) suggesting that, rather than directly influence people, media suicide representations may set the agenda for how some people tackle problems, providing them with a source of information for active problem resolution. Stack (1987) has suggested that media representations of suicide might legitimise suicide in the minds of the audience, particularly if the suicide representation describes celebrity behaviour. This media effect of legitimisation, he has suggested, may be intensified if the suicide representation has points of biographical continuity with the lives of the audience, with the result that they may be more likely to copy what they see, read or hear (Stack 1990a, 1992, 1996). Others have suggested similar 'monkey see – monkey do' accounts of media suicide contagion, suggesting,

for example, suicidal behaviour might be triggered by representing suicide positively, for example as relatively painless (e.g. Ashton and Donnan 1981, also Phillips 1979). Likewise, lack of contagion may be explicable through negative representations of suicide (e.g. Stack 1983). Finally, Jonas (1992) has suggested that disinhibition theory, an idea similar to Stack's notion of a media effect of legitimisation, could explain why his predictions for entries in suicide archives were too low following suicide publicity. Although Jonas made no reference to it, disinhibition theory has been developed by Wheeler (1966) as a general model to account for social contagion. This disinhibitory model suggests that people may have existing internal restraints based on perceptions of the social undesirability of certain acts reduced, that is, have their inhibitions inhibited, when they experience others acting out the inhibited behaviour, because this may be perceived as an indication that the act is not, in fact, so socially undesirable. By seeing an inhibited act performed, the individual may reassess the inhibited status of an act.

These speculations may be useful departure points for developing a theory of media suicide contagion, but what should be clear is that they are completely dislocated from the empirical research that has been conducted by those proposing them. For example, no research has been conducted to assess whether experience of media suicide representations do change people's perceptions of suicide, whether positive or negative representations trigger a reassessment of the desirability of suicide, or indeed whether any such effect is influenced by the status of the suicide model. No research has investigated whether media suicide representations legitimise or disinhibit suicide in the

minds of some people, or whether people at risk from suicide use the media as a resource for resolving personal dilemmas. Rather, the research that has been conducted has been undertaken not only in isolation of other aspects of social contagion research and existing theories of media influence, but also in isolation from many of the researchers' own theoretical speculations. In this way, the function of theory in suicide contagion research to date has been more of a 'crutch' to support ambiguous and generally weak associations between some dates around suicide publicity and variation in suicide rates rather than be used as a torch for guiding investigation. In sum, if researchers believe that media suicide contagion occurs through viral mechanisms or mechanisms of disinhibition or legitimation, then surely their research should focus on whether there is evidence for the operation of such mechanisms rather than seeking to provide more ambiguous and non-specific correlations between the eviscerated ciphers of behaviourist and positivistic sociology?

One possible objection to this criticism of a lack of theoretically informed research into media suicide contagion is that much of the research has been conducted by sociologists who, while claiming media effects as a legitimate object of enquiry, may be arguably less concerned with micro-sociological or social psychological mechanisms that might underpin their aggregated and behaviouristic observations. The reason why any such objection may be seen as untenable is that media suicide contagion refers to a form of social influence on meaningful and deliberate individual action and, unless research is informed by and conceptually integrated with a micro-sociological model of how this occurs, findings sit in a meaningless void and will themselves be

meaningless. The implication of this observation of theoretical paucity in suicide contagion research is that a theory of media suicide contagion may be understood as a useful precondition for empirical research. It is to the development of just such a theoretical model that the next section will turn.

4.0 A Proposed Contribution to a Theory of Media Suicide Contagion

The last section concluded that assessing the empirical plausibility of media suicide contagion by simply generating associations between statistical variables that are derivatives of suicide publicity and suicide is less than compelling. It was suggested that until a theory of *how* suicide representations might influence suicidality is provided to guide and interpret research, any such statistical correlations could be interpreted as at best ambiguous.

Although investigation to date may have been atheoretic within the corpus of research directly pertaining to media suicide contagion a number of theoretical mechanisms have been developed within a broader 'media effects' tradition within mass communication theory that would be continuous with such a putative influence. These theoretical mechanisms are imitation, modelling and priming, and they provide a departure point for the development of a theory of media suicide contagion.

4.1 Of Imitation, Hypodermic Needles, Mind Viruses and Selfish Suicide Memes

One theoretical mechanism proposed in media influence research that may be of potential import to a model of media suicide contagion is that of imitation. Here, the term imitation has not so much been understood in the rather specialised sense of the acquisition and performance of new motor skills (see Section 1.3), but in more general terms in which the media is held to have a penetrating hypnotic power of suggestion that somehow elicits copying

behaviour. In this view, the influence of the mass media is seen as direct and significant, in which representations are replicated in the attitudes and actions of a susceptible audience as if they were injected with some kind of hypodermic syringe (Trowler 2000). This idea that media representations may have such a coercive power over individuals emerged out of mass society theory in which media ownership of the means of symbolic reproduction was considered an important source of propagandistic power in society (e.g. Lippman 1922, Lasswell 1934,). Developed notably by Marcuse (1964) in One Dimensional Man, this model describes the effects of mass media as transforming and corrupting impressionable individuals, often depriving them of the capacity for critical thought.

A more recent variation of this hypodermic model is Phillips' virological approach described above, in which the media is seen, quite literally, as a vector for infectious pathogens. Just as people may not choose whether they contract influenza and manifest its symptoms, neither may they have any choice in whether exposure to a suicide 'media virus' results in infection and the production of suicidal symptoms. Such a viral interpretation was dismissed for failing to specify in anyway how media representations might 'infect' people and spread. Rather, like the hypodermic model, the assumption appeared to be that some people were simply susceptible to infection, that is, open to media suicide suggestion and that this susceptibility could somehow trigger an imitative suicidal response.

Whether couched in the language of viruses or hypodermic needles, this model provides no theoretical mechanism of how media suicide contagion

may occur. Rather, it simply represents an assertion that it does occur. Additionally, it provides no rationale for why the vast majority of media consumers *do not* ape what they see on the screen or read in the press. Decades of research have consistently failed to find *any* strong and compelling empirical associations between media representations and subsequent behaviour, let alone one that amounts to a strong imitation thesis (c.f. Lazarsfeld 1944, Hovland, Lumsdaine and Sheffield 1949, Hovland, Janis and Kelley 1953 for early research, and Gunter 1994, Baran and Davis 1995 for recent reviews of evidence). Instead, research evidence has tended to provide evidence supportive of the idea that media influence, where it may occur, is probably weak, and generally limited to reinforcing existing behaviours and thoughts. In this light of this evidence, the idea of suicide viruses infecting people and inducing imitative suicides not only may have little explanatory power but also seems quite at odds with observation.

However, before rejecting the idea of imitation thus conceived as of little use, *qua* theoretical mechanism, in underpinning a theory of suicide contagion, it is possible to show how such a mechanism could possibly be developed from the sociology of Gabriel Tarde that is neither circular nor vacuous.

Tarde, a *juge d'instruction* in southwest France at the end of the nineteenth century proposed that "epidemics of crime follow the line of the telegraph" (Tarde 1912) and did so because he saw imitation, broadly conceived of in terms of reproduction or replication, as a fundamental dynamic that underpinned not only the social world but also the biological world. Specifically, Tarde suggested that rather than look at the social world from the

perspective of the group or the individual, it could be useful to look at the world from the perspective of the knowledge, action and products that described those individuals and groups (Tarde 1890 translated 1903, reprinted in English 1962, for a review see Marsden 2000, see Rogers 1995 for a modern incarnation of this approach). From this stance, Tarde saw the human mind as a necessary intermediary for the propagation of these cultural reproductions or imitations. This provided a peculiar understanding of people as essentially sophisticated and selective imitators, where imitation was used as a generic term to describe cultural reproduction

> *'All resemblances of social origin in society are the direct or indirect fruit of the various forms of imitation, - custom-imitation or fashion-imitation, sympathy-imitation or obedience-imitation, precept-imitation or education-imitation, native imitation, deliberate imitation, etc. In this lies the excellence of the contemporaneous method of explaining doctrines and institutions through their history. It is a method that is certain to come into more general use.' (Tarde 1962:14)*

Indeed, for Tarde, and Baldwin who developed Tarde's thought the human mind itself could be conceptualised as an imitation machine, whose organisation was a product of the effects of imitation

> *'Self-propagation and not self-organisation is the prime demand of the social as well as of the vital thing. Organisation is but the means of which propagation, of which generative or imitative imitation, is the end.' (Tarde 1962: 74)*

> *If we grant a phylogenetic development of mind, imitation, as defined above[4], may be considered the law and the only law of the progressive interaction of the organism and its environment. (Baldwin 1894:54)*

From this perspective, contagion could be seen as a side effect of an otherwise adaptive and sophisticated imitative capacity that allowed for the propagation and development of generative imitations (innovations). The 'contagion of crime' and, specifically, a tendency for newspaper reports of suicide to influence suicidality by provoking imitation in the impressionable was the price to pay for this important 'chapter in the natural history of consciousness' (Baldwin 1894, 1987, Tarde 1962). This idea that contagion was a consequence of an innate human suggestibility and aptitude to imitate remained popular in the first part of the twentieth century, especially given Le Bon's (1903 [1895]) use of such a model to underpin his theory of homogenous and herd-like behaviour in crowds (also McDougall 1920, Blumer 1951, Brown 1954, cf. Turner and Killian 1957, 1987, Turner 1964).

Unfortunately, neither Tarde nor Baldwin provided any rationale for why, from this perspective, only some people should be susceptible to pathological social contagions such as the contagion of suicide. However, by applying a recent incarnation of this approach in the guise of what is known as 'meme theory' it will be the suggestion here that such a rationale can be developed that allows for an interesting conceptual integration of the imitation thesis with Durkheim's sociology of suicide.

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[4] Baldwin defined imitation in terms of a circular reaction in which stimulus evokes a response that is similar to that stimulus (Baldwin 1894: 27)

The term 'meme' was originally coined to denote a cultural imitation, that is, a cluster of replicated cultural information, by the biologist Dawkins in his well-known attack *against* genetic determinism (Dawkins 1976, 1982, cf. Cloak 1975, 1986). Dawkins suggested that even if one were to disallow individual agency, the human capacity to imitate meant that humans could effectively be off any sociobiological genetic 'leash' simply because cultural imitations could modify the environment of cultural imitation *such that their own reproduction could become more or less likely*. Effectively, Dawkins was turning the genetic determinists' argument against them by drawing on partial analogies between the non-prescient dynamics of information in a genetic substrate of DNA and the dynamics of what might minimally pattern information in a cultural substrate. Just as the propagation of a gene in a gene pool may depend on its effects on its own reproduction, so too could culture in cultural pool minimally proceed by a similar dynamic quite independently to information evolving in a parallel genetic substrate. Some cultural information would have an effect when objectified that increased its own chances of getting reproduced, by say, increasing the cultural fitness, that is, the ability to pass on ideas, of the host mind, whilst other information may have quite the opposite effect. From this meme's-eye view, given the shortage of minds and the abundance of cultural information, culture could have, over time, an increasingly viral quality, as a genetic-independent cultural arms race emerges between competing memes differentially surviving and prospering based on their capacity to be imitated regardless of any genetic prerogatives (Dawkins 1993, Brodie 1996).

The idea of memes as cultural imitations evolving according to this dynamic of 'self-emplacement' (Cloak 1986), that is, according to their consequences for their own reproduction, has inspired a number of new ways of interpreting aspects of the social world, including the emergence of self-serving corporate institutions (Price and Shaw 1998), the cultural spread of altruism (Blackmore 1999, cf. Allison 1993, Hull 1988), and the rise of 'media viruses' such as sound bites, hype and spin that provide a quick fix of meaning in a fast changing and fragmented world of cultural epidemics (Rushkoff 1994, 1999). One notable contribution to meme theory that is potentially relevant to the idea of media suicide contagion is that of philosopher Dan Dennett who has used this memetic dynamic to propose a model of consciousness and self-hood (1993). Briefly, Dennett has suggested that memes collude together in the brain by virtue of their effects on modifying their local environment to make their own replication more likely, into a virtual machine that provides the appearance of consciousness.

> *'Human consciousness is itself a huge complex of memes (or more exactly meme effects in brains) that can best be understood as the operation of a 'von Neumannesque[5]' virtual machine implemented in the parallel architecture of the brain that was designed for any such activities. (Dennett 1993: 210)*

In this model, the very foundation of consciousness is seen as an emergent property of the brain acting as sophisticated imitation machine, that is, a meme machine (Blackmore 1999). From this view, the human self may be conceptualised in terms of, and deconstructed into, clusters of replicating texts

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[5] 'Neumannesque' refers to serial (one at a time) processing of commands that characterises early computers, first built by John von Neumann.

that do not so much parasite a mind but construct it by spinning a post-modern web of discourse around a centre of narrative gravity that describes that self (Dennett 1993, Blackmore 1999, Marsden 1998). It is interesting to note that despite the apparent quintessentially post-modern nature of this view, it is essentially the same model that was proposed by Baldwin a century ago in his development of Tarde's thought.

> *'The self is realised by taking in 'copies' from the world, and the world is enabled to set higher copies only through the constant reactions of the individual self upon it.' (Baldwin 1894: 54)*

Now, the potential relevance of all this to a theory of media suicide contagion is that it provides a possible rationale for the differential susceptibility to suicide contagion. If culture was to have a tendency to propagate based on effects of representation on the likelihood of replication, then the idea of suicide as a meme is only viable over time if it had no systematically deleterious effect on its own reproduction. However, by effectively terminating its host when manifested, suicide seems to have precisely this deleterious effect. The situation is analogous to a virus killing an individual before it can be passed on. From this perspective, suicide actually would seem to reduce the likelihood of its own self-emplacement and therefore over time the prevalence of such suicide memes should reduce in frequency and eventually die out. The exception to this that provides a rationale for susceptibility to suicide contagion would be if susceptibility to suicide were contingent on a low residual capacity to pass on ideas anyway. In such cases, suicide would not have any deleterious effect on its own reproduction, precisely because the infected individual would not be culturally 'viable'. This model leads to an

interesting empirical prediction pertaining to those most at risk from suicide contagion. Those susceptible to suicide contagion should be those with little or no residual capacity to spread cultural information, that is, those who are socially isolated. Further, because cultural information is shared between minds, the suicide of those with low capacity to reproduce their culture could actually increase the overall capacity of cultural relatives to pass on shared culture, including the suicide meme. This is because any influence of cultural information on its own reproduction could be indirect as well as direct insofar as it may increase the chances that a cultural relative may reproduce the shared culture. As long as the overall inclusive influence of cultural information describing suicide is not one of reducing the likelihood that the culture of which it forms a part will get reproduced, an apparent nefarious influence in terms of its direct consequences for self-emplacement might be tolerated over time within a group. Indeed, if an individual actually represented a cost to the overall reproductive potential of the shared culture to which suicide is a part, then suicide could actually have a positive effect on the likelihood that that culture will get reproduced. Concretely, such a model would suggest that those most at risk from media suicide contagion would be the socially disenfranchised, socially isolated, and those labelled as deviants; essentially those who own no means of sociocultural reproduction. This is precisely because such people may not be culturally viable insofar as they would represent a cost rather than a resource in the maintenance and reproduction of the culture or subculture that describes them. In this sense, media suicide contagion could be seen as a fortuitous cultural mutation that

allows a culture to effectively rid itself of parasites that reduce its reproductive potential to maintain itself. In sum, such a model would predict that suicide, spreading by infection over the media, could be tolerated within a culture as long as it impacted on those with neutral or negative sociocultural inclusive reproductive potential.

The origins of such a memetic imitative model of suicide contagion may be seen as lying with the biologist George Hamilton's (1964) insight about how clusters of replicable information in a genetic, as opposed to memetic, substrate with a negative influence on the reproductive potential of the individual may nevertheless be tolerated over evolutionary time. Hamilton suggested as long as any heritable trait enabling (not determining) individually maladaptive behaviour, such as altruism (C_d), did not tend to reduce the overall reproductive chances of the genetic information describing the altruistic individual based on shared genes with kin (rB_r), then that heritable trait could persist in a gene pool (Hamilton 1964).

Figure 2: Hamilton's Rule for the Biological Communication of the Individually Maladaptive Traits

Hamilton's Rule
$C_d < rB_r$

C_d = Cost in direct reproductive capacity to actor, r = coefficient of relatedness, and B_r = Benefit in reproductive capacity to beneficiary

For example, the biologist de Catanzaro has used this model to explain the persistence of heritable neural and hormonal traits that allow, as opposed to

determine, human suicide (de Catanzaro 1980, also 1981, 1984, 1986, 1991, 1995). As long as heritable traits enabling suicidality do not impact negatively on inclusive biological reproductive capacity, then those heritable traits would not be punished, that is, weeded out by natural selection. From such a perspective, de Catanzaro argued, it follows that people susceptible to suicide should be those with a low capacity to reproduce their genes either directly or helping relatives. Concretely, manifestations of suicidality would be expected to be disproportionally present in the elderly, sick, homosexuals, and those without partner or family.

A memetic model of suicide contagion could be directly analogous to this interpretation insofar as contagion would be viewed as contingent on the cost of suicide to the individual in terms of the capacity to contribute to the reproduction of the culture that describes the individual being inferior to any benefit of that suicide for cultural relatives in making such contributions. Specifically, as long as the overall inclusive capacity of the set of culture that describes an individual is not reduced by suicide, because the benefit to cultural relatives in terms of enhancing their capacity to reproduce that culture multiplied by a degree of cultural relatedness is equal or superior to the direct cost in terms of the capacity to makes such contributions, then any suggestion of suicide occurring within any constellation of pro-suicidal circumstances could be more likely to result in suicide.
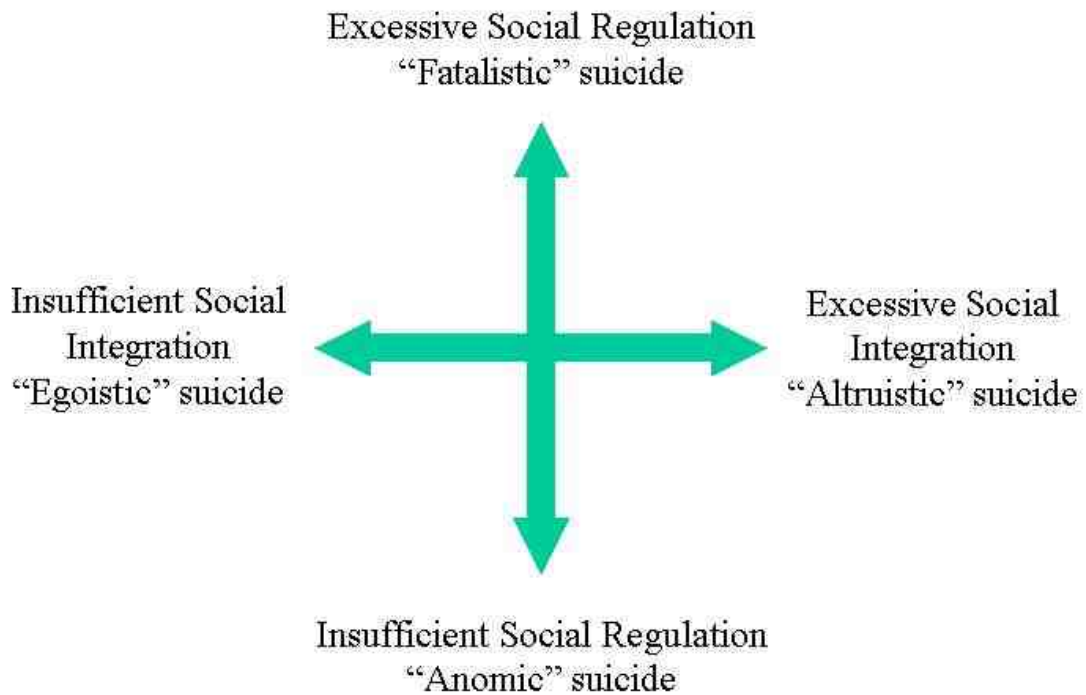
Such an understanding of suicide contagion, media or direct, could allow for a possible conceptual integration with Durkheim's sociology of suicide (Durkheim 1970). Durkheim suggested that suicide, and its differential

incidence between social groups could be explained by differential dislocations between integrative and regulative aspects of social cohesion offered by different group membership and essential human needs for such cohesion. For example, he proposed that risk of suicide for Jews was lower than for Catholics or Protestants because regulative Jewish beliefs met essential human needs for regulation that were insufficiently met in Catholic or Protestant communities. On the other hand, some suicides in traditional cultures, such as the suttee custom of self-immolation for widows in Hindu society could be attributed to an excessive level of social cohesion manifested as an over-integration into a cultural system that precipitates a loss of self-hood. Although much criticised for how he substantiated his model, Durkheim's insight that the quality of social cohesion is a principal risk factor in suicide has remained a central tenet in the sociology of suicide and is widely accepted by non-sociologists as an important influencing variable (e.g. Halbwachs 1978 [1930], Henry and Short 1954, Gibbs and Martin 1964, Maris 1981)[6].

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[6] Durkheim's actual theory of suicide should be differentiated from his political goal of legitimising the use of aggregate statistics in understanding human behaviour, as a way of establishing sociology as a valid and autonomous enterprise. His justification of aggregate statistics made through the suggestion that certain "suicidogenic currents" were only observable through aggregate statistics, and it was these currents that actually caused suicide and determined official national reported levels of suicide. Drawing on nineteenth century collectivist metaphysics, Durkheim proposed that statistical regularities, or social facts, were observable indicators - that is the direct effects - of certain invisible nomic forces whose interplay determined both events in the observable world and a group's collective consciousness, including that group's own "suicidal tendency". Shifts in the dynamic tension of these social forces or differential exposure to them produced variations in suicide levels. This explained, according to Durkheim, why women had a lower suicide rate than men - because they were less engaged in society, they were therefore less exposed to the social forces and the collective consciousness of society and thereby less affected by the suicidogenic currents it produced.

Figure 3: Durkheim's (1970) Social Cohesion Balance Model of Suicide

Excessive Social Regulation
"Fatalistic" suicide

Insufficient Social
Integration
"Egoistic" suicide

Excessive Social
Integration
"Altruistic" suicide

Insufficient Social Regulation
"Anomic" suicide

The proposal here is that rather than ground Durkheim's model in the assumption that social cohesion is an essential sociobiological need, the memetic interpretation offered above provides an alternative neo-Durkheimian rationale for the social communication of suicide, including susceptibility to contagion. Specifically, any cultural information specifying suicide would not have a nefarious effect on its own chances of getting passed on within a culture as long as it was applicable to those with low inclusive sociocultural fitness, that is, to those who are no longer socioculturally viable or represent a cost to their sociocultural kin. In other words, susceptibility to contagion would be expected in those who are mal-integrated into their social group. Indeed, if

suicide actually enhanced the prestige and status of the individual, then aspects of that individual described by his or her culture may have an increased chance of being passed on by the suicide. In this way, the propagation of altruistic suicide embodied by the suttee culture and indeed self-sacrifice may be partly accounted for in terms of not having a negative impact on inclusive sociocultural fitness. Likewise, in addition to using Durkheim's argument that unregulated passions in the human individual may naturally lead to 'anomic' suicide (Durkheim 1970; 246-255), such suicides could be partly accounted for in terms of the negligible impact on the reproductive chances of the regulative aspects of the culture or group an individual is alienated from, precisely because, he or she does not participate in the reproduction of those rules. Put simply, social integration and social regulation could be operationalised in terms of the inclusive capacity to contribute in the ongoing reproduction of shared culture. Indeed, such a memetic rationale could also provide a novel account of war and, more generally, why people fight for their ideas at a personal cost to themselves (cf. du Preez 1996). Specifically, as long as the sociocultural communication of information enabling acts that reduce one's personal capacity to reproduce the culture that quite literally describes one*self* does not adversely affect the inclusive, that is shared, reproductive capacity of that information getting reproduced, then a memetic rationale would expect such acts to be tolerated over time within a group.

Figure 4: A Possible neo-Durkheimian Model for Suicide

A neo-Durkheimian Rule for culturally specified suicide
$C_d < rB_r$

C_d = Cost in sociocultural reproductive potential of suicide to individual, r = coefficient of relatedness,

and B_r = Benefit in sociocultural reproductive potential of suicide to sociocultural relatives

Now, whether such an imitative or memetic model of susceptibility to the idea of suicide turns out to be useful will depend on a number of issues such as the viability of operationalising a measure of experience of social cohesion manifested as inclusive sociocultural fitness, and whether the heuristic provocativeness of the approach lends itself to the generation new and interesting research hypotheses. However, what this proto-model does already show, it is hoped, is that a theoretical mechanism of imitation used to account for media suicide contagion is not necessarily circular or vacuous. The major problem though is that in order to generate and develop interesting hypotheses within this framework requires a major perceptual reorganisation of the social world, taking a stance that describes the perspective of neither the individual nor the group, but the object of sociocultural reproduction. This is a rather radical move in order to make sense of a putative phenomenon for which there is arguably little compelling evidence. It is possible, and perhaps sometimes even useful for some to see the world in terms of the differential replication of sociocultural traits evolving according to a selection by consequences rationale in what amounts to a 'selfish meme' theory of the social world, but in the context of providing a plausible theory of media suicide contagion, this memetic stance may be interpreted as a case of the proverbial

tail wagging the dog (see Plotkin 1994, Rose 1998, Marsden 1998a, 1999a, 1999b, Wilkins 1997, Gatherer 1998 for this and other conceptual difficulties with this general memetic approach). Indeed, it is perfectly possible to construct a rationale for why the socially isolated may be susceptible to the idea of suicide without necessitating such a radical perceptual reorganisation. Likewise, the sceptic could point out that despite any heuristic provocativeness of this imitation model, the approach still starts with the very assumption it seeks to explain; people sometimes copy suicide representations because reproducing representations is what we do.

In sum, imitation is not necessarily a vacuous theoretical mechanism with which to account for media suicide contagion, but underpinning contagion with imitation requires a radical perceptual reorganisation of human activity as essentially imitative. Although the imitation model can be developed so as not to be entirely circular, to do so requires eschewing more established models of human affairs. The next section will attempt to show how existing models, based on ideas about how people might use information to interpret situations and inform action, can be conceptually integrated to make a less radical model of media suicide contagion.

4.2 Social Cognition – a Humanistic Interpretation

The imitation hypothesis discussed above focused on what *media representations might do to media consumers.* An alternative way of understanding media influence, including the possibility of media suicide contagion, is to turn this idea on its head and ask what do media consumers *do with media representations.* Within this more active understanding of the

relationship between media representations and consumers of those representations, two theoretical mechanisms have been proposed that are consistent with the idea of media suicide contagion. Both of these mechanisms fall under the umbrella of what is known as social cognition, a term used to describe how certain thoughts and thought processes might be patterned by information vicariously available to us through the activity of those with whom we share the social world.

Research into the social dimensions of cognition is multidisciplinary, cutting across sociology and psychology, and is multifaceted, covering the social dimensions of inference, attribution, representation, habit and identity. The theme that common to this group of thought is a shared a focus on how people make sense of themselves and each other through their social environment (Fiske and Taylor 1991, Bandura 1986, Augoustinos and Walker 1995, Zerubavel 1997). With respect to media influence, this translates to a view where, instead of conceptualising people as automatons responding mechanistically to media stimuli, people are seen as able to interpret situations, derive meaning and inform action based on information available to them in the social world, part of which is represented through the media (cf. Blumler 1979, Windahl 1981). Within this socio-cognitive focus on media use and influence, two theoretical mechanisms which stand out as contenders for a plausible theory of media suicide contagion, and these are modelling and priming.

4.2.1 Disinhibition and Modelling

Imagine an individual experiencing a conflict between personal desires and perceived social expectations. Specifically, imagine that this individual is contemplating whether or not to respond aggressively to a person who has just insulted them at a polite social gathering. The dilemma that confronts them is whether to adhere to the social norms of politeness, or act according to personal desires and launch a verbal counter-attack on the offending individual. Resolving the dilemma may well include a weighing up of the possible consequences of either course of action; frustration from biting one's lip, or disapproval for breaking the etiquette of politeness at the gathering. In some, and probably most cases, the solution to the dilemma may be clear to the individual, but in some cases the internal conflict may remain unresolved. In such cases, the conflicted individual may look around to confirm, and possibly update, his or her perceptions of what is socially acceptable. In other words, the often taken for granted norms and recipes for typified behaviour become the focus of scrutiny. Rather than simply following rules through force of habit, the dislocation between personal desires and social expectations may prompt a revaluation of the expectation in the context of the current situation. In other words, the individual looks up from a largely predefined script appropriate to the occasion, and thinks. Now, if somebody else is seen to be breaking the perceived appropriate rule of politeness, say by verbally attacking the offending individual themselves, then this might prompt a re-evaluation of the appropriateness of the rule, especially if the observed counter-attack does not seem to have elicited any negative sanctions from the gathering.

The point here is that this active reconstruction of an otherwise taken-for-granted expectation of politeness in the light of current circumstances might result in a modification of this expectation, particularly if the current situation is perceived at odds with prior expectations. In short, the consequences of observing a prohibited act about which one is in conflict about performing oneself going unpunished may well allow for a reassessment of the appropriateness of any inhibitions over acting in a similar way.

Such a theoretical mechanism of social influence has been labelled *disinhibitory contagion* (Wheeler 1966, Levy and Nail 1993) and has been used to interpret patterns of social interaction in both controlled research settings and in the field (e.g. Wheeler and Caggiula 1966, Wheeler and Smith 1967, Wheeler and Levine 1967, Ritter and Holmes 1969, Russell, Wilson and Jenkins 1976, Goethals and Perlstein 1978).

The possible relevance of disinhibitory contagion to the idea of media suicide contagion is the contentious point made by A. Bandura that people may use media representations in a similar way to resolve internal conflicts over whether or not to act in a particular way (Bandura 1994, cf. Bandura 1977, 1986). As an illustration of this, Bandura has cited his research into children with phobias of dogs. By exposing such children to images of other children happily playing with dogs, many of the phobic children were prepared to climb into a playpen with a dog (Bandura, Grusec and Menlove 1967, Bandura 1977).

If we apply this disinhibitory mechanism to suicide representations, the following interpretation emerges. An individual experiencing an internal

conflict as to whether or not a suicidal act is an appropriate response to a distressing situation may use representations of suicide to help resolve the dilemma. In such cases, a resolution to the conflict may be achieved by updating and reinterpreting the social and personal attractiveness of suicide. For example, if a suicide is experienced vicariously through the media and is not perceived as provoking anticipated negative consequences that are the source of inhibition, then the individual may take this as an indication that his or her internal model of suicide and its consequences needs amending. By updating this internal model, internal restraints against suicide may be reduced, that is, disinhibition may occur. In such a process, it is not that representations must be perceived as implicitly or explicitly endorsing or condoning suicide, merely that the representation be more positive than expected. In other words, it is the dislocation between expectation and perception that underpins this mechanism of disinhibition. For example, a neutral representation of suicide occurring in the context of self-censure due to anticipated extreme negative consequences might conceivably have a greater disinhibitory influence than positive representations on somebody else anticipating only minor negative consequences.

4.2.2 Disinhibition as Modelling

The idea that some conflicted individuals may use information in media representations for problem resolution through disinhibition may be understood as part of a more general mechanism of social cognition known as modelling (Bandura 1977, 1994). Modelling in social cognition can be differentiated from an early behaviourist use of the term as a synonym for

copying behaviour (e.g. Miller & Dollard 1941). Rather, modelling from a socio-cognitive perspective may be seen to refer to a process involving the symbolic abstraction of observed or otherwise vicariously experienced actions, to create, inform and update *internal models* for how to act (Bandura 1977). In other words, public representations of acts are used to update subjective representations, that is, models of those acts.

That action appears to be informed by modelling is not particularly contentious, nor a particularly new insight. Durkheim referred to this kind of social learning as 'logical imitation' (1970 [1897]: 129), and Tarde (1967) used it as his central 'logical law of imitation'. The functional advantage of modelling, the ability to inform one's own behaviour based on the successes and mistakes of others is that it allows people to rapidly acquire the benefits of lengthy individual learning without any of the risks or costs. Indeed, computer simulations have shown that when faced with a situation to which there is no one clear appropriate response, modelling is a particularly effective, if not the most effective, decision strategy (e.g. Shlag 1996).

Although modelling encompasses disinhibition, it is a broader mechanism insofar that inhibition is not a necessary precondition. For instance, problem resolution by modelling may not be restricted to the sort of approach-avoidance conflict resolution described above, but may also be used to resolve some dilemma between two or more possible solutions to some dilemma. For example, in the context of media suicide contagion, an individual who is suffering from unbearable distress and is unable to decide between suicide and a non-suicidal solution to that distress may conceivably

seek to resolve the problem by looking to how others have resolved what are perceived as similar problems. This may involve vicariously experiencing better than anticipated outcomes of suicide, or attributing significance to the observation that somebody else appears to have sufficient information to take a decision in favour of suicide, an observation that may be accorded further significance if the suicidal individual is perceived as somebody with a good track record of making successful decisions (cf. Hirshleifer 1995). It is with respect to this last point that the notion of celebrity induced suicide contagion, proposed by Wasserman (1984), Stack (1987) and Jonas (1992) may become more plausible. Specifically, celebrity and expert status may be taken as an indicator that decisions, suicidal or otherwise, taken by such individuals are more likely to be successful. Consistent with this idea is the finding that contagion in non-suicidal context appears to be more likely when the represented individual is perceived as having high status (Lefkowitz, Blake and Mouton 1955, Lipett, Polansky and Rosen 1952). More generally, research in other forms of social influence is replete with examples showing that the influence is increased when perceived status of the source of influence is high (e.g. Bickman 1974, Milgram 1974, Cialdini 1993),

Although modelling may well be a plausible aspect of social cognition, the degree to which suicidal individuals might help resolve any 'Hamlet's Dilemma' characterised by a precarious state of indecision between life and death using vicarious experience of suicide in the media to inform their decisions, is an idea for which there is no direct or even indirect evidence. The following study conducted in early 1999 sought to address this problem.

4.3 Media Contagion by Modelling: An Empirical Investigation

4.3.1 Background

Every year the BBC conducts, with its science series Tomorrow's World, an event called Mega Lab (BBC 1999). The event is designed to investigate certain research hypotheses with the participation of millions of UK viewers, listeners and/or readers. Typically, audiences are asked to respond to a particular question or situation presented on BBC television, the BBC online Internet channel, BBC radio and/or in the BBC Radio Times, by telephoning or sending in their responses using either a free phone number, email or a freepost address. What is particularly interesting about this event for researchers is that the BBC can break up the country into regions and broadcast or publish different items to different areas. In the context of the current research, Mega Lab represented an opportunity for empirically investigating theoretical models of media influence at national level in a massive field experiment. In January 1999, following several publications on research related to this project, the BBC contacted me and asked whether I would be interested in submitting a proposal to Mega Lab related to media contagion (Marsden 1998, 1998b, 1998c).

In theory, this invitation from the BBC represented an unusual opportunity to assess the empirical plausibility of the media suicide contagion by modelling interpretation developed here. For example, the resources allowed for viewers, in different regions, to experience different television reports of a relatively recent celebrity suicide story, such as, for instance, the suicide of the

lead vocalist of the popular rock group *Nirvana*, Kurt Cobain. This 1994 suicide, as well as the reaction of the fans to the suicide, had been highly mediatised, with the BBC dedicating a prime time television documentary to the story. By using out-takes from the news reports and documentary it would have been possible to construct two contrasting short reports of the suicide to be broadcast in different areas, one positive representation of the story identifying the suicide as that of Cobain, while the other a negative representation making no reference to who had committed suicide. A telephone number inviting people to phone in and indicate whether they regularly had suicidal thoughts could be set up that also captured, in a manner similar to Range's studies, self-perceptions of the likelihood of suicide. The research hypothesis would be that suicidal individuals exposed to the positive Cobain representation would consider themselves, overall, more likely to be at risk from suicide than non-suicidal individuals and suicidal individuals exposed to the anonymous negative representation. Following the broadcast, regional health authorities could be contacted, and measurements of any subsequent regional variation in admissions for attempted suicide could be investigated to see whether a particularly high level of these suicide attempters had seen Mega Lab broadcast with the positive celebrity suicide representation. Finally, with the participation of coroners, any subsequent regional variations in suicide levels following the suicide story could be investigated by asking relatives if the deceased had seen the Mega Lab programme.

Such a research scenario would, of course, be quite unethical but its description serves well to underline one of the central problems with media

suicide contagion research. To deliberately engineer exposure to suicide representations within a research context grounded in the expectation that such exposure could have a pro-suicidal influence is highly problematic. However, following discussions with my research advisor Sue Blackmore, an alternative proposal was submitted, designed at least to investigate the idea of media contagion by modelling in a non-suicidal context. Of course, any evidence of media modelling in a non-suicidal context would provide only a very tenuous indication of the plausibility that a similar mechanism might plausibly also underpin any suicide contagion, since the latter may be informed by entirely different processes for resolving dilemmas. Nevertheless, given the ethical constraints on research, if evidence could be generated that was consistent with the idea that people might use media representations of celebrity behaviour to inform confusing or ambiguous situations necessitating a serious decision, then this could arguably provide some indirect and tentative support for media contagion occurring through a modelling mechanism. To this end, the following proposal was submitted to the BBC.

4.3.2 Media Contagion by Modelling: A Dilemma

How trusting and cooperative people are is almost certainly influenced by a number of factors, but the factor most pertinent to a modelling theory of media contagion is that a willingness to trust and cooperate with others in order to resolve a problem may be dependent on exposure to similar trusting and cooperative behaviour, particularly that of a celebrity, in the media. A vehicle for assessing whether it makes sense to interpret such decisions as patterned in this way is the Prisoner's Dilemma. The Prisoner's Dilemma is a moral

dilemma that reveals what people do when the best course of action for an individual is also the worst situation for everybody concerned. Generally, the Prisoner's Dilemma is described in terms of two suspects, A and B arrested on suspicion for a crime who are taken to two separate interview rooms. The police interviewer informs Prisoner A that a confession is not needed because they already have enough evidence to ensure that he or she will be convicted with a prison sentence of one year. However the police officer also proposes a deal: If Prisoner A implicates Prisoner B in the crime, then Prisoner A can go free because this would allow the prosecution to ensure a sentence for Prisoner B of eight years. The problem is that Prisoner B has also been proposed the same deal, and if they both end up implicating each other they will each get extended prison sentences. How should Prisoner A respond to this dilemma?

The only way of avoiding the worst outcome and having a chance at the best outcome is to implicate Prisoner B, but if Prisoner B reasons this way, they both end up going to prison for a long time. The best overall solution is to trust and act cooperatively by not implicating each other.

Figure 5: Prisoner's Dilemma: A Game of Consequences

The Prisoner's Dilemma (Years in Prison)		Suspect B	
		Cooperate (Stay Silent)	Defect (Implicate Other)
Suspect A	Cooperate (Stay Silent)	(1,1)	(8,0)

	Defect (Implicate Other)	(0,8)	(5,5)

The Prisoner's Dilemma has been widely used and adapted in various ways by game theorists to develop and investigate various strategies for successful behaviour when iterative rounds of the dilemma are played (e.g. Axelrod 1984, Dennett 1995, Ridley 1997). One key insight that has emerged from these games is that enlightened cooperation pays; players who cooperate, that is, do not implicate their partner when in the previous round their partner cooperated with them, end up with consistently lower total prison sentences (a strategy known as TIT FOR TAT). Some theorists have taken this as evidence supportive of the idea that life, especially human life, evolved cooperatively based on a heuristic of reciprocal altruism, undermining the idea we are myopically selfish (e.g. Trivers 1971, Ridley 1997). This is as may be, but the contagion by modelling hypothesis proposed here would suggest that serious decisions about whether to trust and cooperate with someone might also be influenced by exposure to media representations of similar dilemmas.

To investigate this idea, it was proposed that the Prisoner's Dilemma be presented on Tomorrow's World Mega Lab by a celebrity such as Peter Snow famous for his election specials and swingometers, under the guise of assessing the trusting and cooperative nature, or not, of the British population. Three regions would see the same presentation explaining the dilemma, except each would have a different ending with Snow indicating what he would do if presented with the dilemma. In Region 1, he would act cooperatively and

not implicate Prisoner B, in Region 2 he would implicate Prisoner B, and in Region 3 (control) Snow would not reveal his response. Viewers would then be asked to telephone in and respond to the dilemma themselves. Any higher level of cooperation found in Region 1, and lower level in Region 2 could be interpreted as continuous with the operation of a media contagion by modelling mechanism. The research proposal was sent to the BBC in mid January 1999 and, although it was short-listed for inclusion in the March 1999 Mega Lab, it was decided that the study required too much preparation for inclusion that year. The BBC suggested that the proposal should be resubmitted for consideration for a future Mega Lab, and it was agreed that if somehow a pilot could be conducted in the interim, this might increase the chances that the proposal would be selected.

Although access to traditional media was not available to conduct a pilot study, the emergence of the new medium of the Internet did provide the means for operationalising this study. Specifically, a draft for a short online magazine ('webzine') article describing the planned Mega Lab study about the Prisoner's Dilemma could be published over the web. People could be invited to read the article to check whether the description of Dilemma was clear, and do so by indicating on a web questionnaire how they themselves would respond to the dilemma. As with the televised version, there would be three versions of the article, each presenting Snow's as choosing differently (cooperate, implicate or not indicated (control)). This research pilot designed to investigate the empirical plausibility of contagion by modelling was operationalised as follows in July 1999.

4.3.3 Research Objectives

To assess the empirical plausibility of the idea that media exposure over the Net to how a celebrity responds to a Prisoner's Dilemma might influence how Net-users respond when presented with a similar dilemma.

Specifically, the research hypotheses were that:

- media exposure to cooperation would be followed by higher than expected levels of cooperation among participants

- exposure to uncooperative decisions, that is, implicating Prisoner B would be followed by higher than expected levels of uncooperative behaviour
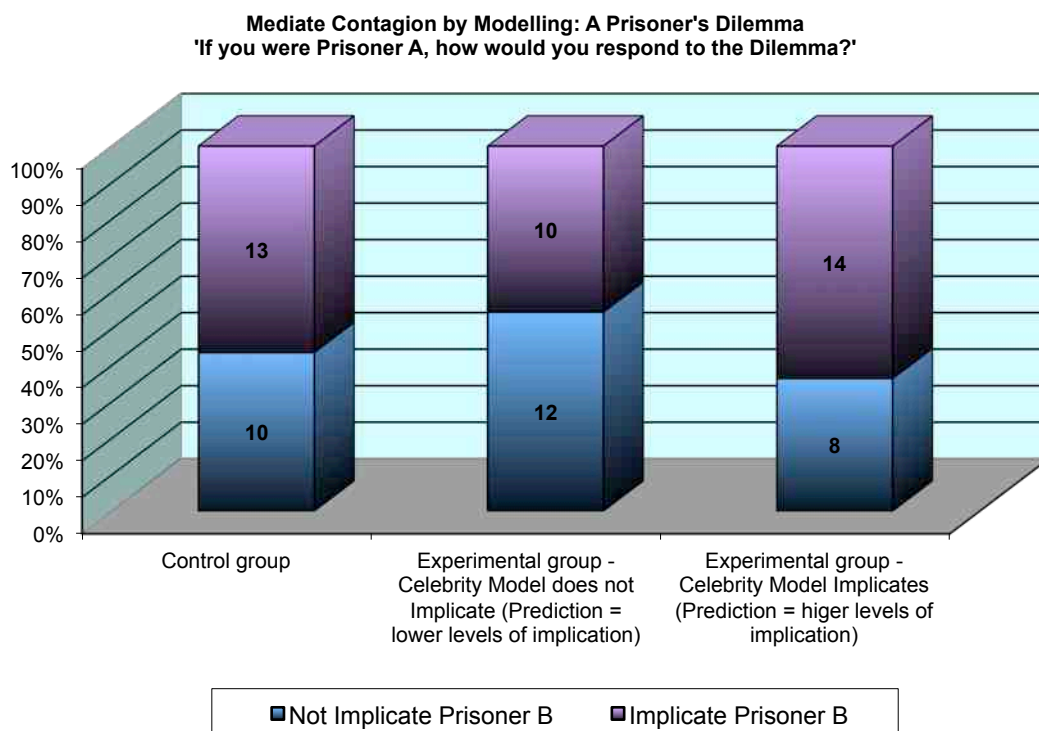
4.3.4 Materials and Method

Three texts explaining the proposed coverage of the Prisoner's Dilemma, identical except in how Snow was reported to respond to the dilemma, along with identical HTML questionnaires were published to the Internet using HTML editor Microsoft FrontPage. To access one of the texts, a hyperlink on an initial Welcome page randomly directed invitees to one of the three texts. The responses were captured in a simple CSV (comma separated variable) database sent from the HTML questionnaire. In this way, participants were invited to read one of three texts and then indicate, following a dummy question on the clarity of the text, their response to the Prisoner's Dilemma. The study was piloted with work colleagues who are market researchers in July 1999, and was published to the Net using their research website, www.brandgenetics.com in August 1999.

4.3.5 Participants and Recruitment

Participants were volunteer UK Net-users over the age of 18 recruited by snowball recruitment. Ten people who had participated in previous online research conducted for my employer, Brand Genetics, and had indicated that they would like to be contacted to take part in future online research, were contacted by email, and invited both to participate and recommend others to participate by email. The rationale and mechanism for this online recruitment strategy, particularly given its non-probabilistic nature, is explained in the discussion of the results below.

4.3.6 Results

Figure 6: Media Contagion by Modelling

Mediate Contagion by Modelling: A Prisoner's Dilemma
'If you were Prisoner A, how would you respond to the Dilemma?'

Sixty-seven UK Net-users participated in the study during the month of August 1999 (42 males, 25 females, average age 21). The research hypotheses

predicted that overall, participant responses to the Prisoner's Dilemma would be associated with representations of Snow's decisions. Specifically, a contagion by modelling mechanism would expect that overall those exposed to uncooperative decisions would have been more likely to behave uncooperatively, whilst those exposed to cooperativeness would have been overall more likely to respond by cooperating. Inspection of a frequency cross-tabulation in SPSS indicated that indeed, the results were in line with these expectations; the group exposed to uncooperative behaviour implicated Prisoner B more often (63%) than in the control group (57%) or the cooperate group (45%). Concomitantly, the group exposed to cooperation, cooperated more (55%) than the control group (43%) and the implication group (37%). Although the results were in line with the expectations from the model, separate chi-square tests indicated no inferences could be made about the likelihood that other Net users not participating in the study would have responded in a similar way. Thus, the association in the 'cooperation' group did not yield an association expected to hold outside of those participating with x^2 = .18, p> .05 (p= .67) even though those participating were more likely to have co-operated having been exposed to cooperation. Likewise in the 'uncooperative' group, the results were not strong enough to provide an indication of whether another group would have been responded in a similar same way; x^2 = 1.63, p> .05 (p= .20). In sum, the study generated results consistent with a contagion by modelling mechanism of media influence, but patterns in the data were weak enough to preclude any possible generalisation of the results outside the research.

4.3.7 Discussion

The results of the study were consistent with the expectations of a contagion by modelling mechanism of influence. Those people who read that John Snow had cooperated, were more likely to cooperate themselves, while those people who read that he had implicated the other prisoner were more likely to have implicated the other prisoner themselves.

A number of comments should be made about this study pertaining to its limitations. First of all, it is quite reasonable to argue that use of media representations in order to inform a moral decision in a contrived research context over the Internet may have little or no bearing on whether media representations might be used to inform decisions outside a research scenario. In other words, the research may have low external validity, that is, poor relevance outside a research context. If this is case, then by extension, any inference that the results increase the plausibility of the idea that media representations of suicide may be analogously used to inform suicide dilemmas is all the more tenuous.

This is indeed a valid criticism and, specific problems with directly investigating suicide contagion aside, it is one that is generic to all research that is not naturalistic, that is, research that does not attempt to control for the influence of confounding variables. Of course, as was noted above in the discussion of naturalistic research, if extraneous variables are not controlled for, then the research may be criticised for having low *internal validity*, that is, an inability to discount alternative interpretations of the findings. Since increasing internal validity involves reducing external validity, there may be no perfect solution to

this research dilemma, and an extreme view might be to conclude that all primary research seeking to identify possible mechanisms of influence such as this could be dismissed for problems of validity. The more pragmatic iew that will be adopted here is to maintain that the generation of results within a research context with good internal validity that is continuous with a proposed theoretical mechanism is a necessary but not sufficient condition for making inferences about the empirical plausibility of a mechanism analogous to the model patterning human activity outside a research context. If this condition is met, and if more naturalistic research can also generate results continuous with the proposed theoretical mechanism, then a triangulation of the results may be interpreted as raising the heuristic value of interpretation using such a model.
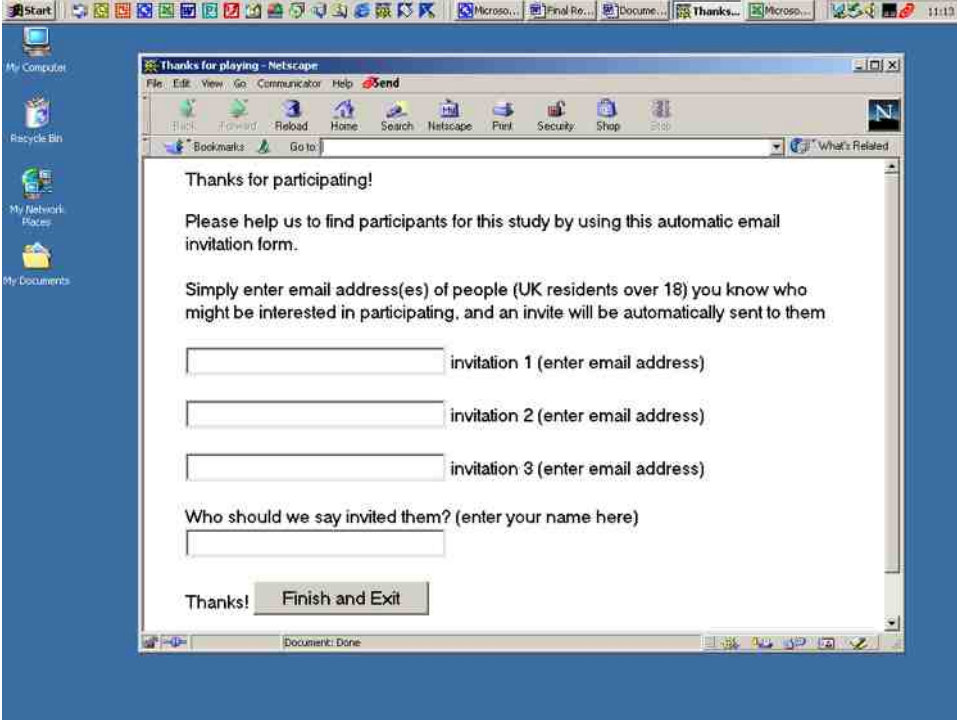
From this more modest perspective, all that this media modelling study provided was evidence consistent with the predictions of a theoretical mechanism of influence by modelling within a non-suicidal Internet-based research context. On its own, such a finding hardly confirms the heuristic value of the model in helping interpret the putative phenomenon of media suicide contagion for which there is arguably little direct compelling evidence. However, the results are useful insofar as they provide no reason to reject the proposed theoretical mechanism as a potentially useful way of conceptualising an alleged influence of media representations of suicide on suicidal decisions. Whether such an influence is empirically plausible remains, as yet, an open question.

A second more practical issue of concern to this web study is the juxtaposition of non-probability sampling and the use of inferential statistics. Non-probability sampling refers to the sampling of information in a population, in this case, adult UK Net users, in a manner where not every person has an equal chance of appearing in the data. Because there is no repertoire of all Net users in the UK, or no one place where they are all equally likely to be found, non-probability sampling is a necessary consequence of conducting web-based research or indeed any research requiring voluntary participation where response rates are less than 100%. However, the validity of inferential statistical tests, such as the chi-squared non-parametric test is based on the assumption of probability sampling. The implication is that it is therefore illegitimate to use inferential statistics to assess the reliability of results, that is, as a measure of the likelihood of finding similar results in a repeat of the study. This may be the case, but unless one accepts that human action is governed by mechanistic and universal laws of influence, a view that is fundamentally at odds with the idea that cognition itself is constructed to some extent out of one's local and transitory social environment, then such a positivistic use of inferential statistics is doubtful anyway. Rather, such statistical tests may be seen as providing an indication of the strength of patterns found in the data that may not necessarily be taken as indicative of the risk that the relationship would not be found if the study was repeated. From this interpretation, the failure of statistics to provide 'significance' may be understood as indicative of the relative weakness of the action of any modelling influence.

A third issue relating to specifically this study and also more generally to web research is that of recruitment techniques. Although far from spectacular, the response level of sixty-seven people without offering incentives was, in the current climate of research, quite substantial. Like offline research which is currently facing a crisis because fewer and fewer people are prepared to participate, participation levels for web-research research are very low, typically less than 1% following an unsolicited email invitation (Kent and Lee 1999, Basi 1999). This means, for example, that in order to recruit the 67 participants by email invitation, around 7000 emails would have had to be sent out. Not only would this have contributed to the irritating and escalating problem of junk email, such a strategy is becoming increasingly implausible because email software programmes now allow people to filter out and never receive uninvited emails from unspecified addresses. Together with parallel offline techniques for barring unsolicited postal and telephone communication, the research industry is currently experiencing an increasingly acute crisis in the recruitment of participants (Cervi 2000). It is within this context that the 'snowball' or 'chain' recruitment technique was chosen for this study, because of its ability to yield higher than usual response rates.

Snowball recruitment is an iterative non-probability recruitment technique where one participant provides information about where subsequent participants may be found. Such a strategy has traditionally been useful in offline research in overcoming low response rates or for locating potential participants who are hard to find. Essentially, snowball recruitment makes use of existing social networks to recruit participants, with participants

recommending others of a suitable profile who might be suitable and prepared to participate. Although it has not, to my knowledge, been developed in the context of web research before, the approach is potentially highly adapted to web research because it is possible to automate the process by asking each participant to suggest the email addresses of several people they know of a given profile who might also be prepared to participate. By getting participants to type in these email addresses on an HTML questionnaire, email invites can automatically be generated and sent to these containing instructions and a hyperlink to take them automatically from the email to the online research site. If the name of the participant recommending other participants is also captured, this can be automatically inserted into the subject line of the invitations, thereby increasing the chances that the 'recommendees' will participate because they identify the incoming mail as related to somebody they know.   In this way an electronic chain mail can be initiated with the potential to grow geometrically, spreading like a virus over the Net through an online population. Because of the unique viral nature of this online recruitment technique, it might be appropriate to coin a new term to describe such a form of recruitment, such as, for example, *viral recruitment.*

Figure 7: A Simple HTML Form for Viral Recruitment

It was this viral recruitment technique that made it possible to use a small database of participants of past online research conducted by my employer, Brand Genetics, who had indicated that they would like to participate in future research. After completing the task, participants were invited to invite up to three other adults in the UK who they thought might agree to participate. This viral technique had the added advantage of partially overcoming a problem of any research not conducted in a face-to-face situation, that of ensuring that only people with a requested profile participated. For example, although the HTML questionnaire indicated that participants should be UK adults, it would have been technically possible for a non-UK person to participate in the same way that a child or non-household member might fill out a postal survey intended for an adult householder. The viral recruitment approach had a built-in safeguard against this issue, since the problem could only occur if people

went against the instruction and invited people not of the requested profile and if invitees of a different profile deliberately ignored the instructions on the questionnaire.

Although fairly self-evident, one final limitation of this study is also of note. The results of web-based studies such as this generate results relevant, at best, only to Net-users prepared to participate in online research and not to any wider population including non-Net users. Although access to the Net is generalising with currently 17 million Net users in the UK, there is a bias towards men who make up 60% of users, and towards socio-economic categories A/B/C1 (A/B =38%, C1=39%, C2, 14%, D/E 9% of class have Internet access). In terms of age profiles, those in the age bracket 35-49 are believed to be the heaviest Net users (for latest statistics on Net demographics see Nua 1999). This dislocation in the most elementary of demographic breaks between online and general populations means that, over and above any problems with the validity of inferential statistics, web-research generates results that may only be relevant to online populations.

In conclusion, this study generated data that was consistent with a theoretical mechanism of influence by modelling in a non-suicidal context among UK Net users. On its own, this is far from compelling evidence that such modelling may occur outside an artificial research scenario in suicidal contexts. However, the results are tentatively supportive of the idea that such a theoretical mechanism might describe how conflicted individuals could use media representations of suicide to resolve dilemmas over suicide decisions. Before proposing a new and more direct way of investigating the plausibility of

this theoretical mechanism of influence by modelling in a suicidal context, the next section will build upon this basic model and integrate into it a related mechanism developed in social cognition theory. That mechanism is priming.

4.4 Priming and Media Priming

Priming refers to the idea that the way in which people interpret situations may be patterned not only by that situation but also by recent and frequently experienced events. For example, a habitual walk home after seeing a frightening movie may result in an increased level of fright because the themes evoked by the film remain salient in the mind, thereby producing what amounts to a media contagion effect - the spookiness of the movie influences subsequent interpretations of events. Another example of priming, and one that has been used to *discount* some of the experimental findings of media modelling research, is Bandura's 'Bobo doll' study (Bandura, Ross and Ross 1963, Bandura 1965) where children would apparently mimic a film depicting gratuitous acts of violence against an inflatable clown with a mallet. Rather than interpret this as crude imitation, it is possible to see an influence as one in which the media representation primes attention to certain aspects of the environment, in this case, a mallet and a Bobo doll. If attention is primed to the mallet and Bobo doll, then what else are children supposed to do other than hit the latter with the former? (cf. Trowler 2000). More generally, priming suggests that the ways in which situations are interpreted can be influenced by the degree to which related subjective representations are salient in memory through having been the focus of recent and/or frequent attention (Fiske and Taylor 1991).

The idea of priming as a short-term transitory influence operating either mediately via media representations or directly on interpretation is relatively well established, both empirically and theoretically. This research has been reviewed a number of times elsewhere (e.g. Berkowitz 1984, Berkowitz and Rogers 1986, Jo and Berkowitz 1994), but the following are illustrative of findings continuous with the idea of media priming:

· in a meta-analysis of thirty-one laboratory experiments on media priming of aggression, Andison (1977) found that, by and large, people exposed to violent images would tend to act more aggressively than those not exposed to violent images shortly after exposure.

· in a meta-analysis of twenty-eight laboratory experiments in which the dependent variable was a natural rather than contrived expression of aggression, Wood, Wong and Cachere (1991) found an overall significant increase, of an order similar to general social-psychological predictors, in the likelihood of aggression immediately following exposure to violent images.

· male exposure to a pornographic film was followed by an increased level of sexist responses to women in an unrelated context compared to those not exposed to the film (McKenzie-Mohr and Zanna 1990).

· exposure to pop music videos with stereotypic representations of men and women was found to result in a short term higher than

expected stereotypic interpretation of male-female interactions (Hansen and Hansen 1988b).

· use of words with aggressive connotations in a sentence construction task before evaluating an individual positively or negatively was found by Wyer and Srull (1981) to result in a greater likelihood of negative evaluations than those performing the priming task with neutral words.

· in a similar task, Carver, Ganellan, Froming and Chambers (1983) found that those primed with aggressive words would deliver more intense electric shocks to a fellow student who made a mistake.

· passive exposure to words with hostile connotations to which participants were unaware was found, by Bargh and Pietromonaco (1982), to result in negative evaluations of another person even though participants were unaware of the words.

· background radio reporting of a pro-social news story was found, by Holloway, Tucker and Hornstein (1977), to result in more cooperative behaviour between males in a bargaining task than those who had not heard the news.

· men seeing a short film involving a hostile interaction between a businessman and his secretary were more likely to evaluate an ambiguously described person as hostile (Carver, Ganellan, Froming and Chambers (1983).

- exposure to a slide show of weapons was followed by an increased readiness among students to inflict severe punishments on a target compared to those that had seen a neutral slide show (Leyens and Parke 1975).

- after reading a comic book either about war or one with a neutral theme, children who read the war comic were more likely to select aggressive words to complete sentences (Berkowitz 1973).

- people playing either an highly or mildly aggressive arcade game were found, following an assessment for hostility, to be more hostile than those not playing aggressive games (Anderson and Ford 1987).

It should be clear that although similar, the idea of priming is distinct from modelling insofar as priming can be interpreted as a relatively involuntary aspect of social cognition, while modelling typically denotes a deliberate use of information available in the action of others to clarify and update interpretations. However, in terms of any demonstrable influence, this distinction may be clouded by the way primed representations themselves might become categories for deliberate reinterpretation. An illustration of the interpretive nature of priming influence is the finding of a study in which two groups of males saw the same football match, but one group was told that the players were deliberately trying to injure each other. Primed with this interpretation, the group were subsequently prepared to inflict greater punitive behaviour towards a target following viewing than those not told that the game was aggressive (Berkowitz and Alioto 1973). Another media priming study

also illustrates how any influence of priming may be dependent on how people interpret and define a situation. In this study, a group of deliberately frustrated schoolboys were exposed to a violent film in which the villains used a walkie-talkie. In a subsequent game of floor hockey, children were found to be more aggressive if the referees carried a walkie-talkie (Josephson 1987). The implication was that the walkie-talkie had been interpreted as symbolic of aggression, thereby priming aggressive thoughts that informed action. More generally, Berkowitz (Berkowitz 1984, Jo and Berkowitz 1994) has suggested if a media representation presents aggression negatively, negative thoughts around aggression may be primed thereby making media contagion less likely (cf. Goranson 1969). Likewise, the extent to which the media representation is perceived as real and relevant may influence any demonstrable priming influence (cf. Turner and Berkowitz 1972, Leyens and Picus 1973, Berkowitz and Alioto 1973).

In sum, the theoretical mechanism of priming may be understood in terms of how subjective representations that have been recently or frequently the focus of attention might influence how a situation is interpreted. In this way, priming may be seen to have a 'diagnostic role' in helping the individual to make sense of a situation thereby possibly increasing the likelihood of interpreting a situation in a particular way that is consistent with recent experience.

Although it is possible to question the external validity of these experimental research results consistent with the action of priming, it will be the suggestion here that is a compelling logical reason for why priming should occur. The conceptual appeal of priming follows from the observation that in order to

interpret and respond to a situation, our minds must be able to process information relevant to that situation. The problem, known in philosophy and cognitive science as the *frame problem* (Dennett 1993), is that unless there are a priori constraints on how a situation is interpreted, a combinatorial explosion of information requiring interpreting occurs which would paralyse the mind of an individual. Put simply, the potentially infinite information and derivative permutations that could be used in interpretation and action must be somehow bounded or framed by categories of meaning into which experience may be interpreted in order to avoid 'paralysis by analysis'. Priming could be seen as providing this bounding of interpretation in a way that is rather effective. To illustrate this, it is instructive to turn to a peculiar case of contagion involving not suicide but bottle tops and blue tits.

During the 1950s a peculiar phenomenon spread across southern England; people would find that foil milk bottle tops, previously untouched, had been pecked open. The culprits were small garden birds, blue tits that apparently seemed to be learning this rewarding new trick from each other. Like a contagion, this milk bottle pecking spread across the country as if the act was being progressively modelled and imitated. The problem with this interpretation of the bottle top contagion is that it appeared to undermine the consensus of research among comparative and animal psychologists suggesting that, with a very few action-specific exceptions, non-human animals do not appear to be able to engage in this sort of sophisticated observational learning. Rather, it is thought that non-human learning of new behaviours is generally restricted to individual learning characterised by a

blind exploration of possibilities followed by a selective retention of those associated with rewarding consequences (Sherry and Galef 1984, Blackmore 1998 cf. Skinner 1984). However, an alternative interpretation of the contagion was developed without endowing the tits with an unrealistically sophisticated capacity for modelling. Specifically, it was suggested that the contagion spread by individual learning that was guided by an automatic priming of attention to the locus of attention of other birds. This priming phenomenon, known as stimulus enhancement, refers to an involuntary influence involving…

> *'…the tendency to pay attention to, or aim responses towards, a particular place or objects in the environment after observing a conspecific's actions at that place or in conjunction with those objects' (Byrne and Russon 1998: HTML version)*

In this way, the priming of attention effectively bound the birds' search for adaptive behaviour through subsequent trial and error learning in a manner that nevertheless allowed them to capitalise on the fruits of the learning of others, without the cognitively sophisticated capacity for observational learning (Sherry and Galef 1984, Blackmore 1998; for other examples of similar priming in non-human animals Zentall and Galef, 1988, Whiten and Ham 1992, Byrne, 1994).

From an evolutionary point of view, the idea is that it is possible that any heritable cognitive variation that allowed for such priming would have been naturally selected because of the adaptive advantages it offered over unqualified blind variation and selective retention individual learning mechanisms (cf. Tomasello, 1990, Byrne and Russon 1998). In other words,

the combination of priming and individual learning provides a simple proxy for a more sophisticated modelling capacity that nevertheless allows the acquisition of the benefits of lengthy individual learning without any of the risks or costs. Put differently again, a rationale for why this automatic priming should occur is that it provides for an adaptive bounding of learning. In this way, priming may be interpreted as providing the blue tits with 'cheap' but relevant information about the local environment as to where attention might be profitably directed. Once directed to a particular location, a course of action already open to the individual may be used or a new one may be acquired through individual trial and error (selection by consequences) learning. In either case, priming may be understood as an adaptive bounding, that is, an adaptive narrowing of attention within the potentially infinite information available in an environment that may indirectly inform activity in a manner that increases the likelihood of a similar responses to a situation being elicited to those to which one is exposed.

It follows from the foregoing that one way of interpreting priming in humans is that, like other animals, we have inherited a naturally selected cognitive mechanism that bounds interpretation and action by objects or events salient in the environment by raising their salience in memory. The rationale for such a model is similar to that of modelling. The information available in the actions of others within a shared environment is a valuable resource that may be used, in this case, in a relatively automatic fashion to usefully inform action. To explicitly apply this thinking to media suicide contagion, the role of priming may be understood as follows. It is plausible that exposure to media

representations of suicide could have a weak influence on suicidality through an involuntary priming effect of such representations on how suicide is interpreted by distressed individuals considering suicide. Specifically, the increase in salience of particular meanings of suicide could non-randomly pattern how a suicide decision is interpreted. To illustrate how such a contagion by priming of meaning mechanism of influence might be a useful interpretive heuristic, it is instructive to turn to a curious event known as 'June Bug incident' that occurred in Strongsville, US, 1962.

In June 1962, the managers of one of Strongsville's major textile companies had to close down their production factory because of a 'mysterious sickness' that was affecting onsite workers. On the evening of the closure, a television news report described how at least ten women and one man had been admitted to hospital suffering from rashes and severe nausea. The news report suggested that the cause of the sickness was a poisonous bite from an insect that had arrived in a shipment from England, and had taken up residence in the factory. Several weeks later, with the plant still closed, a total of 62 workers had sought medical attention, having developed the symptoms of having been bitten by the bug. From initial rashes and nausea, the effects of the poisonous bite appeared to develop into chronic severe weakness punctuated with acute panic attacks. The US Public Health Service Communicable Disease Center and entomologists were called in to investigate, and took the expensive decision to fumigate and vacuum the huge textile plant. They found just one black ant, one housefly, a couple of gnats, a small beetle and one mite. It seemed that there had been no dangerous

English bug at all. When Kerckhoff and Back (1968) interviewed both victims of the mysterious illness and those who had not developed symptoms, they found that victims were more likely to have been those suffering from undiagnosed stress and alienation prior to having been 'bitten'. The interpretation offered here is that by priming the idea of an insect bite, the 'affecteds' were able to diagnose and make sense of an ambiguous and pre-existing condition. In other words, the media primed a meaning to a non-specific malaise.

Kerckhoff and Back described this social communication of physical symptoms in the absence of a biological pathogen as a case of 'hysterical contagion' because the symptoms had been close to those of clinical hysteria, and that the victims had tended to be hysterical in the vernacular sense. In the priming model proposed here, information from the media and colleagues primed a particular self-diagnosis to an ill-defined and ambiguous situation of work stress and alienation that resulted in what was perceived as contracting a disease.

The June Bug incident was not an isolated occurrence of hysterical contagion. The same year another case of what is also known as a hysterical epidemic (Showalter 1997), or epidemic hysteria (Sirois 1982) occurred in a Midwestern electronics plant, (Cohen, Colligan, Wester and Smith 1978). In this case, fifty-one employees of the electronics plant had reported that a strange noxious odour was causing headaches, dizziness and nausea, although a careful inspection of the plant found nothing that could have caused these symptoms. A questionnaire administered to sufferers found that they were

experiencing a greater degree of alienation from work than non-sufferers, that is, more job pressure, more job ambiguity and with less control over their work. From this priming perspective, the contagion could be interpreted in terms of how exposure to meanings used by work colleagues to interpret a situation, had a priming effect on how symptoms, for which there was no readily available explanation, were interpreted. Such a priming interpretation is consistent with a subsequent meta-analysis of a number of similar cases by Colligan and Murphy (1982) in which hysterical contagion was defined as the 'the collective occurrence of a set of physical symptoms and related beliefs among two or more individuals in the absence of an identifiable pathogen': Direct and media exposure to interpretations of certain symptoms, primed and framed meaning.

In a similar way, a priming mechanism might be of use in interpreting the apparent contagion of hysterical narratives or 'hystories' – hysterical stories – manifesting themselves in modern malaises such as chronic fatigue syndrome (myalgic encephalomyelitis) and post-traumatic stress disorder that appear to spread from person to person by exposure (Showalter 1997). Other apparent cases of contagion that may be interpreted within this priming framework in which exposure may have a diagnostic and prognostic value for subsequent thought and action include eating disorders such as anorexia and bulimia, Gulf War Syndrome, 'recovered' memory of sexual abuse, satanic ritual abuse, alien abductions and UFO sightings, ghost sightings, grieving behaviour, and Münchhausen syndrome (Amirault 1995, Pfefferbaum and Pfefferbaum 1998, Houran and Lange 1996, Showalter 1997). The suggestion here is that

suicide may be added to this list, specifically that media suicide contagion may be understood in terms of a possible media priming effect on how the meaning of suicide and suicidal situations are interpreted and defined by distressed individuals. Any potential use of the media representation on how suicide is interpreted by such priming may then be extended by deliberate modelling.

The problem already noted with assessing the plausibility of this socio-cognitive model of media suicide contagion based on the mechanisms of priming and modelling is that by exposing people to suicide representations, they might interpret any distressing situations as more suicidal, and therefore the research could conceivably contribute to the distress and ultimately suicide of participants. On the other hand, providing further evidence for the empirical plausibility of contagion by priming in non-suicidal contexts is not likely to increase the plausibility of this interpretation of media suicide contagion, since there is already an overwhelming body of research supporting this idea. The time has come to focus more specifically on the idea of media suicide contagion and explore how the model proposed here may be investigated without invoking these ethical concerns.

4.5 Media Suicide Contagion by Priming: An initial empirical investigation

4.5.1 Background

One indirect and weak way in which the idea of media suicide contagion by priming mechanism could be assessed is to adapt the research protocol adopted by Range et al. (see Section 2.4). Recalling the basic research design of Range and her colleagues, individuals were randomly assigned to

one of two groups that viewed either a representation of a troubled individual who knew of somebody who had acted suicidally, or a representation of a similarly troubled individual in which no mention was made of knowing someone who had acted suicidally. All participants were then asked to indicate how likely they thought it was that the individual in the representation subsequently acted suicidally or, in some cases, indicate the likelihood that they themselves would act suicidally in a similar situation. The results of these studies, it will be remembered, were ambiguous, and not always supportive of contagion.

By modifying this design only slightly, it is possible to assess the usefulness, empirically speaking, of the contagion by priming mechanism developed here by investigating whether media exposure to the concept of suicide over the Net, prior to interpreting a text about a distressed individual, appears to influence how a situation is interpreted as suicidal. If it could be shown that exposure appears to have no influence on how people interpret situations as potentially suicidal, then this could be interpreted as tentative evidence against the model. On the other hand, if results were continuous with such an influence, then they could be interpreted as weakly and indirectly supportive of the idea of media suicide contagion by a priming mechanism.

4.5.2 Research Objectives

To assess the empirical plausibility of the idea of suicide priming, specifically that media exposure over the Net to the concept of suicide can influence how a situation is subsequently interpreted as being potentially suicidal.

Specifically, the research hypothesis was that:

·   an accepted invitation to take part in research explicitly about suicide will result in a text describing a distressing situation as being more likely to be interpreted as potentially suicidal than following accepted invitations to participate in the same research but with no mention of suicide

4.5.3 Materials and Method

Standard experimental design of controlled exposure to the concept of suicide in the introductory text to a self-completion web questionnaire in May 1999 was piloted offline in April 1999. Following this, participants were randomly assigned to either an experimental group or a control group, all invited to first read a short text about a distressed student at university, and then indicate on a standard 5-point Likert scale, the likelihood that the student would commit suicide (1 = not at all likely, 5 = very likely). The only difference in materials used between the two groups was how the research study was introduced to them; in the experimental group the welcome screen introduced the study by saying that it was about young people and suicide, and in the control group about young people and stress. The texts and HTML questionnaires were published to the Internet using Microsoft FrontPage and a custom CGI script that randomly directed participants from an initial index welcome page to one of the two texts. The responses were captured in a simple CSV (comma separated variable) database sent from the HTML form.
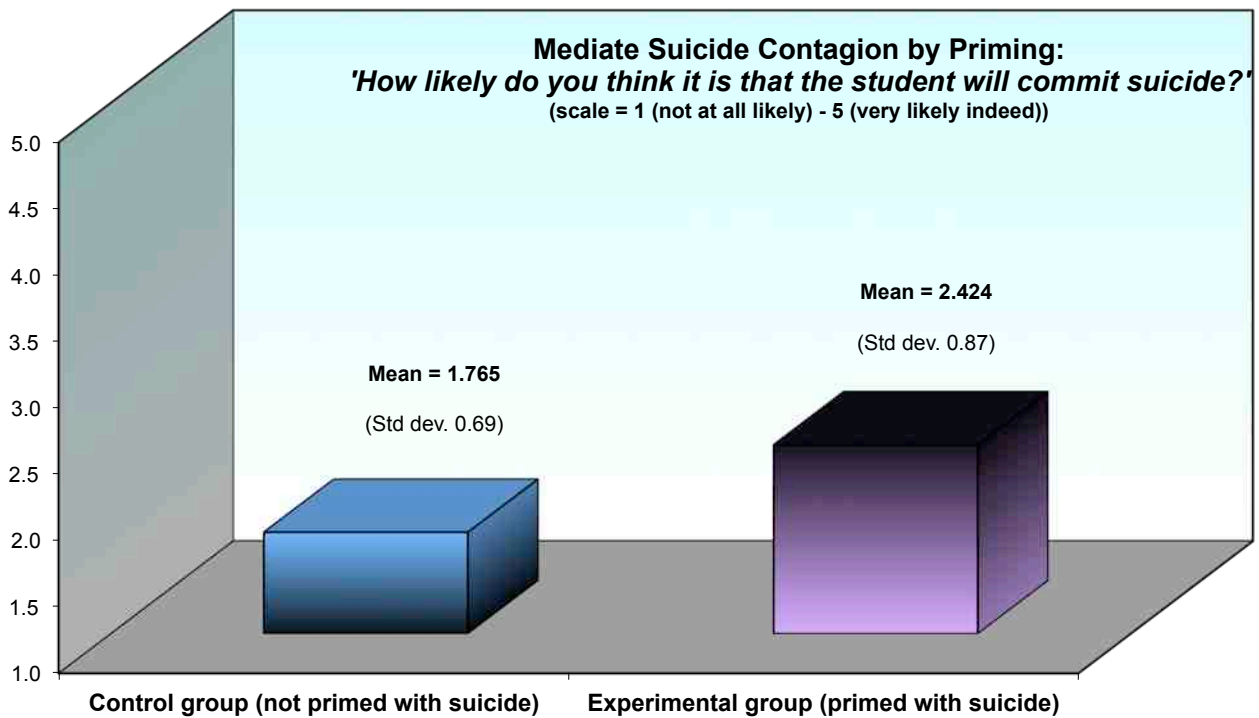
4.5.4 Participants and Recruitment

Participants were UK Net-users over the age of 18 recruited in the same way, through viral recruitment, as for the previous modelling study. The chain was

initiated by asking ten people, who had participated in research conducted by my employer who indicated that they were prepared to participate in future online research. Because of the potentially sensitive nature of the research, no incentives were offered, and instructions were given to those recommending individuals that only those over eighteen should be invited. Additionally, attention was called to a hyperlink provided on each page of the web questionnaire to an online support group, (Samaritans – although this was unnamed) if they found the exercise in any way distressing. Finally, participants were told that they could change their mind about participating, and withdraw from the exercise at any time.

4.5.5 Results

67 UK Net-users completed the task (36 male, 31 female, average age 22) over a two-week period in May 1999. The research hypotheses predicted that participants primed with the concept of suicide in the invitation would be more likely to assess an ambiguous situation as more suicidal than participants not primed with the concept of suicide. An inspection of the mean results was consistent with this, with those primed with suicide interpreting the likelihood that a distressed individual would commit suicide at 2.42, and this compared to 1.77 in the control group. A one-way ANOVA (analysis of variance) revealed that this difference was statistically significant at the 0.001 level $(F_{(1,65)}= 11.79, p< .001)$ indicating a strong patterning of the data in a way consistent with expectations of the model.

Figure 8: Suicide as Mediately Contagious

Mediate Suicide Contagion by Priming:
'How likely do you think it is that the student will commit suicide?'
(scale = 1 (not at all likely) - 5 (very likely indeed))

Mean = 2.424

(Std dev. 0.87)

Mean = 1.765

(Std dev. 0.69)

Control group (not primed with suicide)   Experimental group (primed with suicide)

4.5.6 Discussion

The results of this study were consistent with the idea that representations of suicide can prime the concept of suicide in peoples' minds and influence the interpretation of ambiguous situations by facilitating a perception that the situation is suicidal. Although the research hypothesis was confirmed by a strong patterning of the data, thus suggestive of such an influence for the group of participating adult UK Net-users, the use of non-probability sampling would have precluded any possibility of generalising the results to a more general UK Net-user population, even if this were considered a legitimate strategy. Although the results were continuous with expectations following from the model in terms of interpreting somebody else's situation as suicidal, this does not imply, other than extremely weakly, that participants might also

be more likely to interpret their own situations as suicidal following media exposure to suicide. To investigate this possibility without incurring ethical problems of deliberately exposing people to media suicide representations, a new research approach will be needed. Such an approach will be developed below, following one further development of the emerging model.

4.6 Developing the Conceptual Model of Priming

The model proposed here is that the putative phenomenon of media suicide contagion may be understood in terms of how exposure to meanings inferred from media representations may colour interpretations of suicide and suicidal situations by priming, that is, by increasing the salience of those meanings in memory. One way to conceptualise this mechanism is to draw from an established model of human memory as a constellation of interconnected networks of meaningful associations, in which components of meaning in memory are conceptualised as nodes linked together by varying degrees of strength by association (Berkowitz and Rogers 1986, Berkowitz 1986, Jo and Berkowitz 1994, Bollen 1996, Bollen and Heylighen 1998 cf. Anderson and Bower 1973, 1980, Anderson 1993, Landman and Manis 1983). Priming can be interpreted within this model by understanding active memory as sharing a finite amount of energy, allowing only so many nodes to be activated at any one time. The idea is that when activated by becoming the focus of attention, the concept and related concepts in the network are easier to retrieve, that is, the mind is primed with these concepts for a short term until the activation of these associative nodes has decayed (Higgins 1989, Fiske and Taylor 1991, Berkowitz 1984, Jo and Berkowitz 1994).

Following Collins and Loftus (1975), Berkowitz (1984, 1990) has suggested that when an object of thought is brought into focal awareness there is a 'spreading activation' along associative links to other nodes, allowing for easier recall of related thoughts (Taft 1991).   In this way, the mechanism of priming is conceptualised in terms of differential memory accessibility and selective memory activation impacting on perception, interpretation and action. Geen and Thomas (1986) sum up this concept of spreading activation that manifests itself in the efficacy of mnemonic techniques and the relative ease with which people can recall related concepts.

> *'Thoughts of which one is consciously aware send out radiating activation along associative pathways, thereby activating other related thoughts. In this way, ideas about aggression that are not identical to those observed in the media may be elicited later. In addition, thoughts are linked, along the same sort of associative lines, not only to other thoughts but also to emotional reactions and behavioural tendencies.' (Geen and Thomas 1986: 12)*

Indirect support of this idea of priming through a spreading activation of semantically associated concepts, in what Berkowitz has labelled 'cognitive-neoassociationism', has been provided in a study in which individuals were presented with one word, for example 'suicide', and then were briefly flashed another word, such as 'death'. When asked whether the second word was a real word or not, the response time was consistently faster when the words were associated, indicating that associated concepts are indeed also activated when we are exposed to a particular concept (Neely 1991, Taft 1991). Here, priming may be conceptualised in terms of increasing the salience of semantically related concepts in the mind of the audience, which it is

suggested here, may then figure in and colour subsequent deliberative thought and action.

Although there are other models for interpreting memory, such as in procedural rather than declarative terms, or in terms of sets of exemplars, rather like ideal types, or more recently as non-representational parallel distributed processing (PDP), understanding memory as associative allows for a plausible mechanism of priming within an interpretive framework such as this in which meaning is central.

4.7 A Proposed Conceptual Integration: Priming, Meaning and Framing

Underpinning the media-priming model advanced by Berkowitz is the notion that ideas may be represented in memory as associations, a model that has a long heritage, dating back to Classical Greece with Plato's assertion that memories evoke related memories (cf. Warren 1916). The British empiricists developed the Aristotelian model that ideas are stored in memory by the three 'Laws of Association'; similarity, contrast and contiguity (closeness) in space and time. For example, Locke coined the term the 'association of ideas' to denote how knowledge of the world may be structured in a manner where complex ideas are combinations of associated simple ideas, whilst Hume argued that our causal understanding about the world is based on contiguous associations between observed events. Around the beginning of the twentieth century, research operationalised within the school of methodological behaviourism conceptualised learning, as classical conditioning, in terms of associating events (Wundt 1883), while Galton's free association test (Galton

1880) was used by Freud (1924) and subsequent psychoanalysts as a psychodiagnostic tool to uncover and unpack subjective meanings in the treatment of neuroses. Similarly, the diagnostic utility of associations has been used in identifying schizophrenia (Bleuler 1911), a condition originally conceptualised as an associative disorder involving a 'loosening of mental association'.

More recently still, the subjective and social meanings of a concept have been described in terms of the set of associations they evoke for individuals and groups (Deese 1965, Szalay and Deese 1978), and have been used to describe and sometimes contrast social representations between groups (Marsden and Bollen 1999, Marsden 2000a, Wagner, Valencia and Elejabarreieta 1996). To illustrate this idea of associative meaning, the term 'jisatsu' may be meaningless until it can be associated with something already in a representational system. The term actually means suicide in Japanese, and it is possible to represent this meaning in terms of the associations of Japanese and suicide around jisatsu. In this conception, the meaning of an object of experience is not understood as having a fixed essential characteristic; rather the interpretation will depend on the individual and group-specific constellations of associations it evokes. For example, the meaning of suicide for one individual or group with a belief structure inimical to suicide may be characterised by a negative set of associations that the word evokes, such as 'sin', 'selfish', 'cowardly', 'waste', and 'death'. These meanings may then be contrasted more positive meanings for some pro-suicide group, for instance 'escape', 'freedom', and 'way out'. In other words, understanding

meaning in terms of networks of associations provides for a distributed *representation* of meaning that is suggestive of meaning as variable and socially and situationally constructed (cf. Law and Lodge 1984). Instead of understanding meaning as fixed, and essentialistic, this associative concept of subjective and intersubjective meaning describes meaning in terms of a family of possible meanings described by the various permutations that can be generated by the set of associations around a concept.

It is here that a more modest interpretation of the concept of a *meme* introduced above (Section 4.1 on imitation as a potential mechanism to account for contagion) may be developed to clarify the model. When Dawkins initially coined the term meme, he did so in order to make a number of partial analogies between culturally inherited information in **mem**ory and biologically inherited information in genes. Although the analogy between memes and genes has been hitherto almost exclusively pursued in terms of cultural information spreading through populations, the concept of meme *qua* a component of memory is rather apt in the distributed and associative network model of meaning described here. Essentially, as a culturally heritable 'gene of meaning' a meme would represent a node in the network of meaning that combines and recombines through associative links with other memes to represent meaningful perceptions. To pursue the analogy further, a *memetic network* to coin a term, might be said to describe the semantic 'DNA' of meaning.

The relevance of memetic networks and associative meaning to the priming model proposed here is that to the extent media representations might

selectively activate potential nodes of meaning around, for example, suicide, priming could be understood in terms of calling to mind certain associations while adumbrating others – effectively presenting a particular bias towards one interpretation among a myriad of potential meanings of suicide.

This selective priming could occur in one of at least two ways. Firstly, for a representation to be meaningful – such as a discussion of the term 'jisatsu', it must minimally relate to, that is, activate nodes within a memetic network of associations. In the extreme, if this does not occur, for instance, if suicide were to be represented in terms of jelly beans, then the representation may be said to be meaningless because it does not activate any associations that could make it meaningful, with the practical upshot that no priming takes place. On the other hand, the degree to which there is a semantic continuity between the representation and certain associative nodes, the representation may be said to be meaningful and therefore the theoretical plausibility of contagion by priming is raised.

Secondly, insofar as a media representation of a concept may selectively increase the salience of a subset of associative nodes in a memetic network that describe possible meanings of suicide, the media representation may be said to 'frame' suicide by emphasising only a subset of possible meanings. From this perspective, framing could be interpreted as a selective focus and increase in salience of some of the possible associated meanings in a memetic network of suicide. For instance, the representation of a concept, say 'firearms', using a selective focus on positively associated memes, such as 'defence' or 'security', as opposed to 'violence' and 'death' effectively

frames the communication, and may promote the likelihood of a positive interpretation of the communication, irrespective of any perceived explicitly persuasive content of the representation. In the case of suicide, this model might account for the possibility of media contagion in terms of a priming of certain suicide meanings through how a representation is framed that are thereby more likely to be included in suicidal thoughts. Cohen, as far back as 1963 made essentially the same point:

> *'The press is significantly more than a purveyor of information and opinion. It may not be successful much of the time in telling people what to think, but it is stunningly successful in telling readers what to think about' (Cohen 1963: 13).*

In this idea of media framing, the media is understood to exert an influence on perceptions and indirectly, actions, by 'framing' issues, that is, by representing them in a certain way, selectively emphasising certain salient aspects often within normatively loaded frameworks (McCombs and Shaw 1972, Goffman 1974, Iyengar 1991, Entman 1993). Thus, in a review of media framing research, framing has been defined as follows:

> *'To frame is to select some aspects of a perceived reality and make them more salient in a communicating text in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation' (Entman 1993: 52)*

Within this framing approach, the role of influence of the media might be conceptualised in terms of providing a subset of the possible components of meaning for the interpretation of an event or issue that structures perceptions, not by active imitative, persuasive or coercive processes, but by directing attention to possible interpretations that may either have some *subsequent*

diagnostic value in interpreting past events and a possible prognostic value in informing future action (cf. Tannen 1993).

One example continuous with this idea of media influence by framing through a priming mechanism is a study conducted by Kahneman and Tversky (1984) that focused on the following problem:

> *'Imagine that the US is preparing for the outbreak of an unusual Asian disease, which is expected to kill 600 people. Two alternative programs to combat the disease have been proposed. Assume that the exact scientific estimates of the consequences of the programs are as follows: If Program A is adopted, 200 people will be saved. If Program B is adopted, there is a one-third probability that 600 people will be saved and a two-thirds probability that no people will be saved. Which one of the two programs would you favor?' (Kahneman and Tversky 1984: 343)*

In this study, 72% of participants responded by choosing Program A and 28% chose Program B. The researchers then asked a second group to read an identical text, except that they framed the text in terms of the probability of people *dying* rather than being *saved.* Framing the text in this way by priming the audiences minds with either the concept of 'saving' or 'dying' was sufficient to completely reverse the proportion of people selecting either Program – Program A was chosen by 22% and Program B by 78%. In other words, the selective focus on associated terms with combating disease, either death or saving lives, can be interpreted as setting the agenda and framing the issue for subsequent deliberate thought, resulting in very different outcomes.

Although a conceptual link between framing and priming has not hitherto been developed in this way, the two ideas might be usefully integrated by conceptualising priming in terms of the selective activation of possible

associations in a memetic network that describe a particular interpretation and meaning of a representation, whilst thinking of framing in terms of how meanings are non-randomly represented in media representations. In the context of media suicide contagion, this provides for the following model. *The possibility of media suicide contagion may be understood in terms of how positively framed media representations may evoke a non-random subset of possible meaningful associations around suicide, thus increasing the salience of those meanings in the minds of those exposed to them. For the vast majority of people not caught in any unresolved dilemma over whether to act suicidally, this priming may have no effect on decisions, but for any such conflicted individuals the primed meanings may colour suicidal thought and perceptions, thereby possibly influencing a suicide decision. Any influence of this relatively automatic priming may then be compounded by a possible deliberate use of the media representation to update internal models of the meaningful consequences of suicide if those representations are perceived as more positive than anticipated, thereby potentially and indirectly informing suicide decisions.* In short, the idea developed here is that through a nested hierarchy of influence consisting of priming and modelling, exposure to positively framed media representations perceived as meaningful could, in some distressed individuals in situations experienced as potentially suicidal, modify interpretations of the meaning of suicide and the situation and thereby inform suicide decisions. Conceptualising media suicide contagion in this way provides for interesting and researchable idea that if it were possible to identify the dominant set of associations that describe suicide for a group of

individuals, then it might be possible to construct a negative but meaningfully framed suicide representation, that through priming and modelling mechanisms could possibly reduce any media contagion effect. The next section will propose a new empirical research tool that might be used to generate such a social representation of suicide that describes the shared meanings of suicide.

5.0 Presentation of a Grounded Research Tool – Generating Memetic Networks

5.1 Associative Techniques in Research

A variety of methods have been employed to generate the potential heuristic insight that might be gained in eliciting associations around a concept from individuals and groups. For example, researchers have used 'discrete free associations', that is, sets of single associations around particular word made by a group of participants to establish word association norms (Russell and Jenkins 1954). Alternatively, 'continued free association' is used to generate as many associations as possible around a word within a time constraint to provide an 'associative rate', that may give some indication of the meaningfulness of that word for an individual or group (Noble 1952). A third approach is that of 'continuous free association' where participants produce chains of associations emanating out from a central concept to provide a discourse of meaning. For example, the associative chain 'suicide – pain – suffering – torture – prisoner – jail' may be seen as progressively unpacking the meaning of associations (Deese 1965). Finally, core meanings have been

assessed by a technique called 'successive free association', which involves repeating association exercises after an interval with the same or different people and comparing the results and identifying common core themes.

Associative techniques may be considered useful in the investigation of meaning because, in addition to the theoretical utility developed here and any intuitive appeal they may have, they have a number of methodological strengths insofar as they provide an efficient means of extracting potentially rich and unexpected insights by combining structured questions and free responses. Participants are not bounded by closed questions such as in the semantic differential (Osgood 1952) and may use their own interpretations rather than working within an interpretive framework imposed at the outset. At the same time, associations are far more succinct than lengthy responses to open questions, and far more time-efficient than participant observation. An association of 'free' to 'suicide' may immediately capture the essence of what many days of investigation may take to uncover. As Szalay and Deese, conclude

> '…associations are simply a remarkably easy and efficient way of determining the contents of human minds without having those contents expressed in the full discursive structure of language' (Szalay and Deese 1978: 9).

For the researcher wishing to gain insight into the meaning of suicide for particular individuals, then the associative techniques outlined above may be considered useful tools, but for the present purpose of understanding the dominant meanings of suicide for a particular *group* with a view to priming and framing suicide representations negatively, the technique appears labour

intensive and wasteful. What suicide means to one person, represented in a network of connecting associations may well be different for another, and the daunting task of integrating a large set of discrepant and idiosyncratic separate associative networks into some meaningful whole is daunting, if not practically impossible.

One solution to this problem has been adopted by Szalay and Deese (1978) in what they called 'the method of associative group analysis' (AGA). In this technique a group of individuals, usually 50-100, list as many associations they can within a set time around a given concept such as 'educated' (continued association). Following this exercise, the associations are counted and grouped together into meta-associations by a third party jury. Finally the jury labels each of the associations groups as having overall positive negative or neutral meanings. The results are then plotted on what the authors call a 'semantograph' (see Figure 9), in which the frequency that particular associations are made can be weighted by the number of times the association also appears if a second round of the association task is conducted.

Essentially, the semantograph consists of a set of bars measuring each of the weighted components of meaning radiating out from origin of a set of concentric rings. The length of the bars represents the relative dominance (weighted frequency ($F(x)$)) of each of the associations. In the context of Szalay and Deese's research, by plotting the results of two different groups on the same graph, comparative insight into meaning of the term 'educated' for

two groups, such as ethnic minorities and white middle classes may be revealed.

Figure 9: An example of a simple semantograph, un-weighted, contrasting the associative meaning of suicide for two groups

The Associative Meaning of Suicide for Two Groups

Men
Women
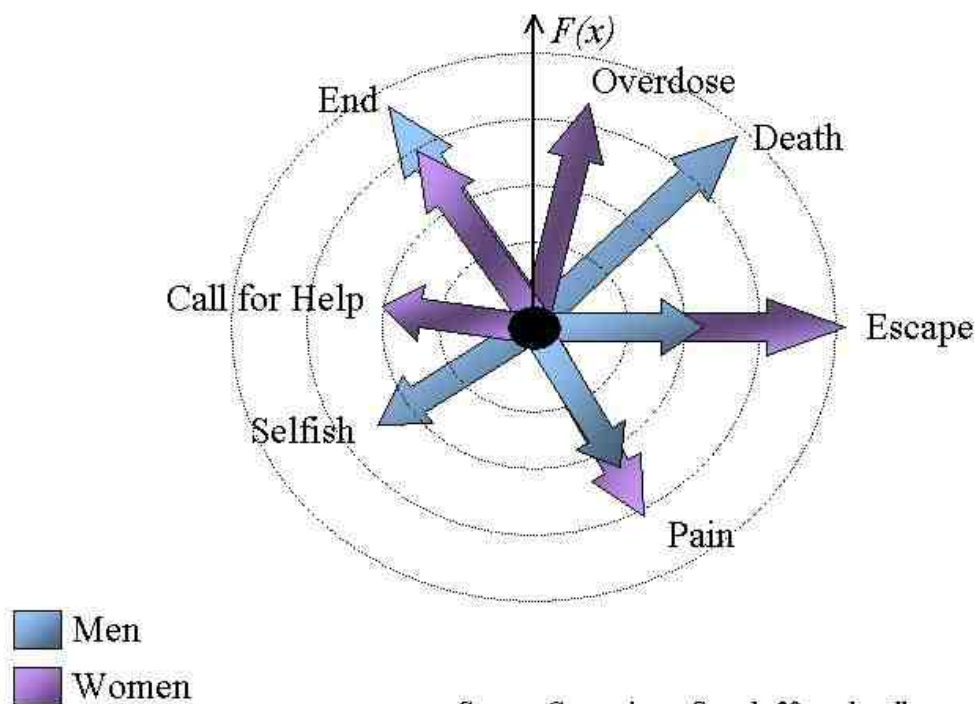
Source: Convenience Sample 20 work colleagues Jan 1999

Although adopting this method of associative group analysis could be a viable option for research seeking to unpack the associative meaning of suicide for one or more groups of individuals here with a view to framing media suicide representations, the process is labour intensive and suffers from a number of limitations. For instance, as it stands the technique necessitates the longhand collection, sorting and interpretation of individual associations before they can be reinterpreted in the graph. This is time-consuming and adds an additional

bias in the organisation of the data because a third party must decide whether the meaning for an individual is positive or negative, as well as judge whether or not to group together what they think participants would think are similar associations. Further, the meaning of the associations themselves is left entirely open to third party interpretation, for example, polite may have appeared as a dominant associations for 'educated' for two different groups, but the meaning of 'polite' may have been just as different for each group as was the meaning of 'educated'.

A potential solution to the issue of how associations could be interpreted might have been to ask a group of individuals to complete a combination of continuous and continued association tasks in which they would not only list immediate associations around a concept but chains of associations around a concept. Thus, the meaning of a first-order association, polite, would be unpacked by its own second-order associations. Similarly, the participants themselves could have also indicated whether or not the association evokes positive or negative feelings for them, thus reducing interpretive bias of a jury. The problem with such an approach is one of practicality; researchers would have to manually analyse and organise collected associations, not only around one central concept, educated, but also the associations around each of the associations, as well as process the extra information captured on the affective polarity of the associations, resulting in a geometric explosion of the amount of time needed to generate a summary graph that unpacks the associative meaning of the central concept. The suggestion that will be made

in the following section is that through the development of an online tool for such associative group analysis this problem may be resolved.

5.2 The Internet as an Associative Network

Although the Internet has its origins in the U.S, a major step in the evolution of the Internet was provided by a group of European scientists from the European Particle Physics Laboratory (CERN) in 1991 who developed a navigation system called 'http' (**h**yper**t**ext **t**ransport **p**rotocol) for moving around the Net, based on the way a spider moves around a web. It is this navigation system linking documents by association that provides the possibility for an online tool for associative group analysis. By simply clicking on 'hypertext' links it is possible to jump immediately between documents within or between Internet sites, allowing millions of documents on the Internet to be connected together by association in a giant World Wide Web. The relevance of hyperlinks to associative research techniques is that they can be used in a relatively straightforward way to design an interactive web questionnaire that allows participants to play an online continuous word association game. In such as game, entering an association to a word could automatically and dynamically generate a new web page hyperlinked to the page from where the association is entered. For example, a participant can be asked what he or she associates with the word 'suicide' on a particular web page, and by entering an association, say 'death', in a text box on that page this can be used to automatically generate a new 'death' web page hyperlinked to the 'suicide' page.

Figure 10: An Online Word Association Game that Generates a Hypertext Network

Participant enters association

New Web "Death"page is created hyperlinked to suicide page

Page 1

What word first comes to mind when you hear the word **suicide?**

Page 1

What word first comes to mind when you hear the word **suicide?**

death

New Page

In the context of **suicide**, What word first comes to mind when you hear the word **death?**
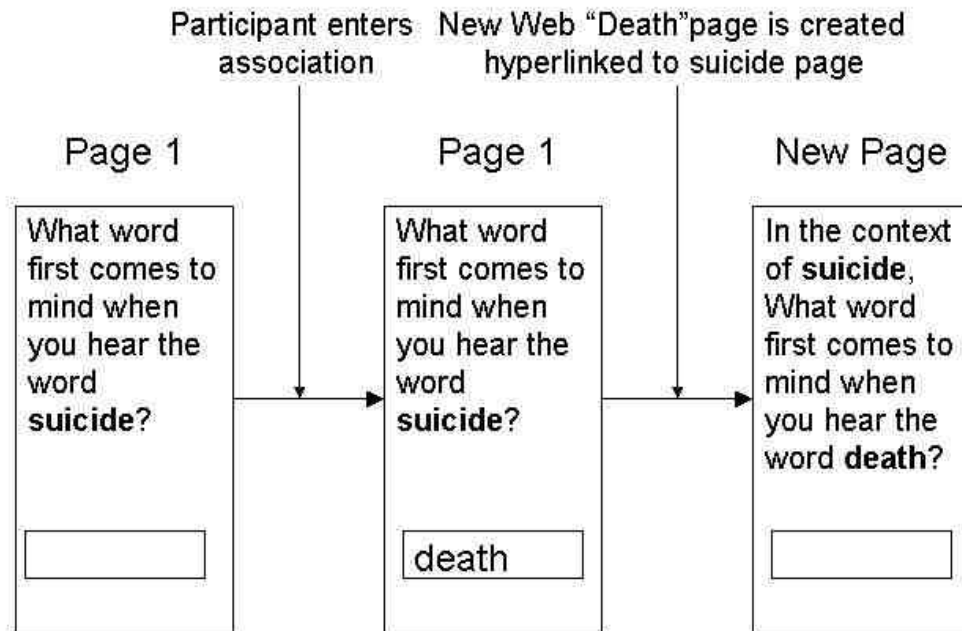
Each time a new association is added, a new web page is generated and, as more participants play the game, a hypertext network of web pages linked by association emerges.

Figure 11: A Possible Hypertext Network describing the shared Meanings of Suicide

A Simple Hypertext Network Describing
an Associative Meaning of Suicide
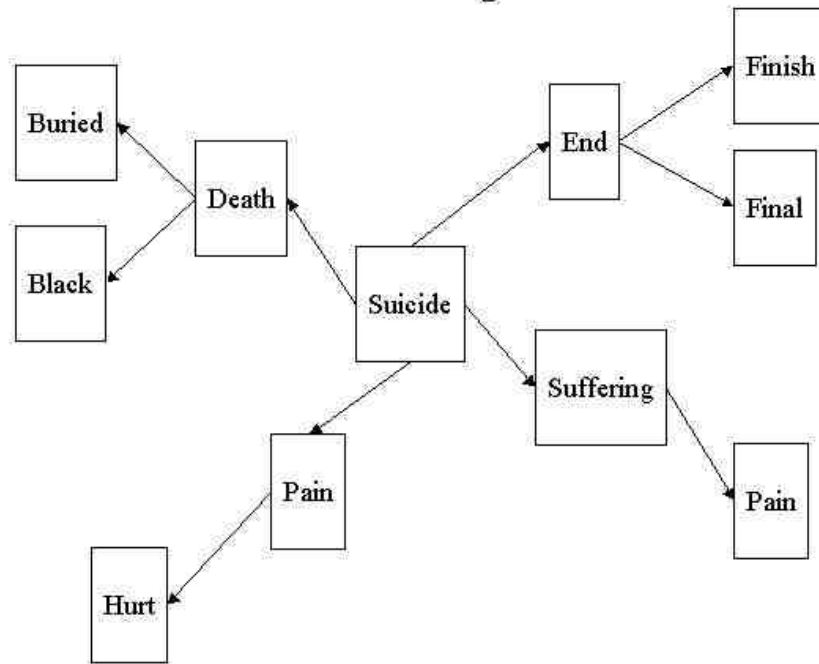
In the offline version of group association analysis introduced above, all the data is collected before analysis begins, producing some 50-100 individual associative networks that have to be grouped together into one group level view. This is done by a jury who try to group similar words together and then sum the words in each of the different groups to provide the information for manually constructing a semantograph. However, one of the capacities of the web as a research medium is that it allows data to be integrated automatically as it is captured, allowing a group-level picture to evolve inductively, building up out of the patterns of responses as they are given. Specifically, once the first participant has completed a set of association chains around suicide,

these can become options for selection for subsequent participants who then either select existing hyperlinks to associations they would make, or create new pages by entering new associations:

Figure 12: Data Collection using an Online Association Test – First Participant Screen (participant enters association of death)
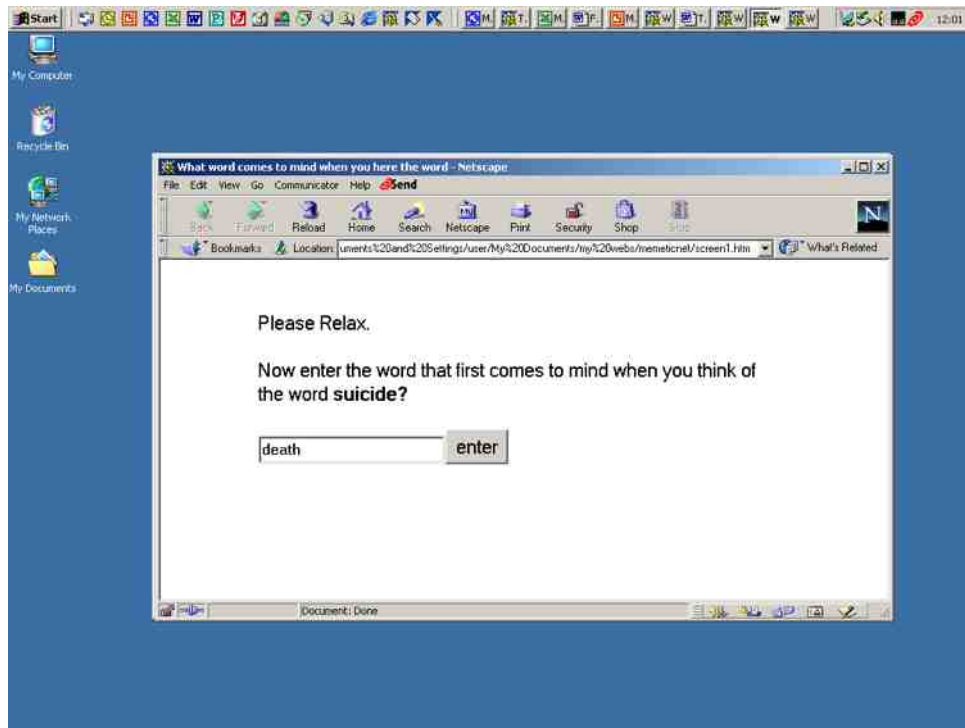
Figure 13: Data Collection using an Online Association Test – First Participant – Second Screen capturing associations of association
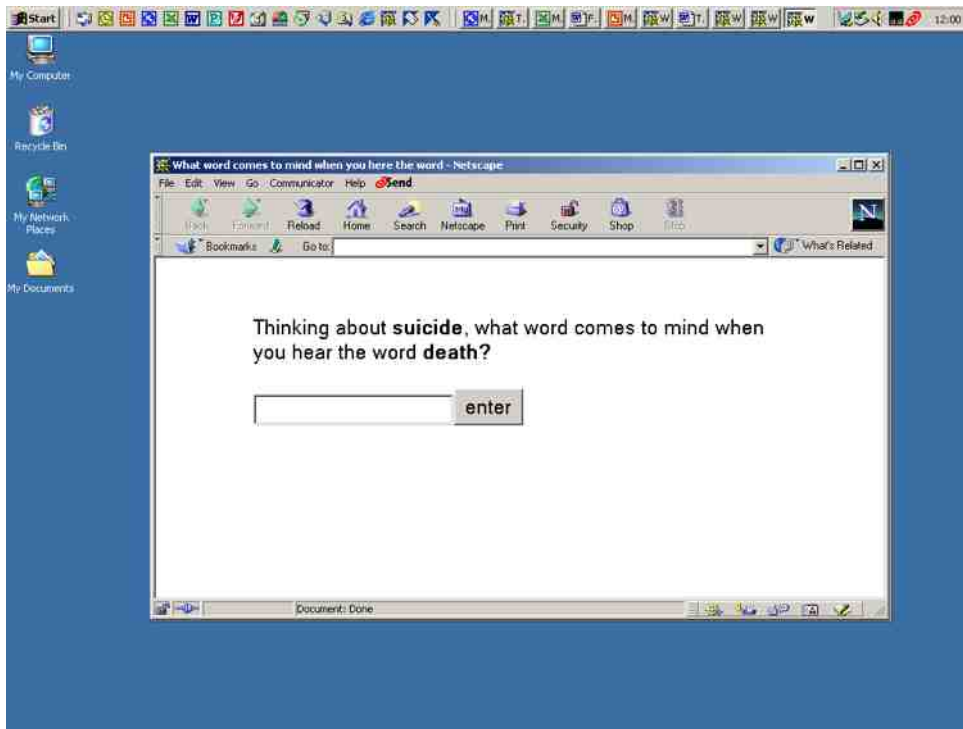
**Figure 14: Data Collection using an Online Association Test –
Subsequent Participant Second Screens allow for the existing
associations to be selected**
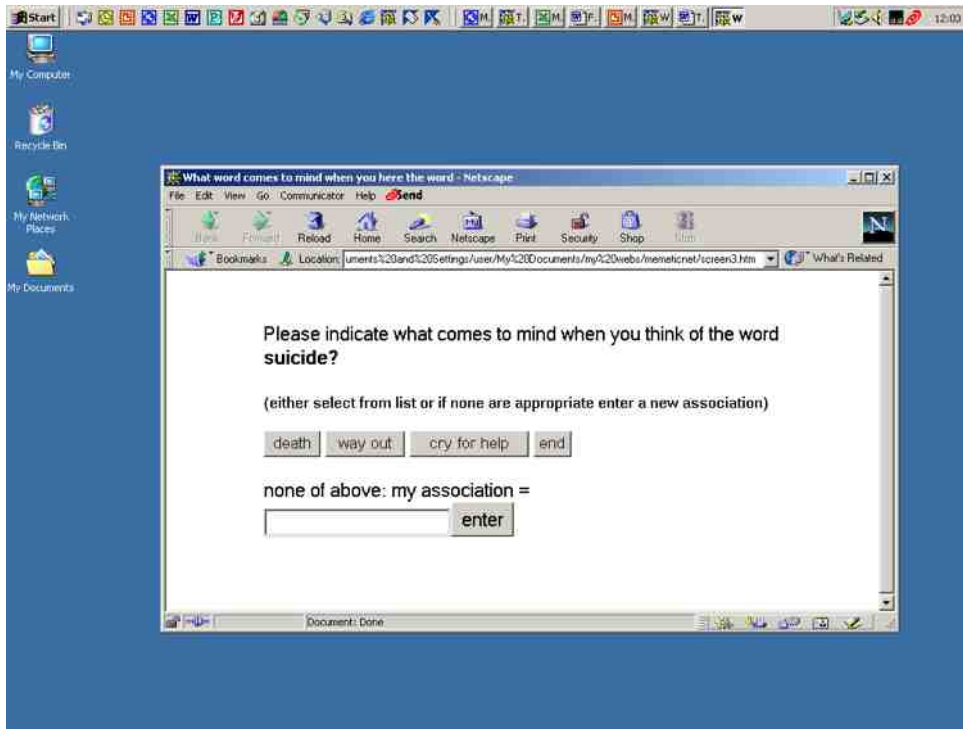
In this way, one group-level hypertext network can evolve, in which
participants either select existing associations or add new ones. In other
words, as participants enter chains of associations the network can grow with
new associations generating web pages that become options for subsequent
selection. Technically, this can be achieved by attaching a small set of
instructions in a web programming language, such as ASP (Visual Basic for
Applications), to the text box in which new associations are entered that
automatically creates both a new web page with the name of the new
association and puts a new hyperlink on the page from which it is created.
Thus, by adding a new association 'death' to 'suicide' into a text box, a new

death web page is created and 'death' is added to the list of hyperlinks representing possible associations from suicide for subsequent participants.

Over and above any savings in time that this online associative group analysis technique based on a hypertext network may have over an offline version, it also has the feature of obviating the need for an external jury to assess whether *different* associations collected in isolation actually have the *same* meaning to the participants, in a grouping task. This is because participants can themselves choose whether to add a new association, or select what they consider to be an equivalent expression of an existing association. Further, the online version obviates the need for the jury to judge whether an association evoked positive or negative feelings for the participants. Instead, after playing the word association game participants themselves can be asked to indicate whether the associations they made held positive or negative meanings for them.

**Figure 15: Data Collection using an Online Association Test –
Capturing the Affective Polarity of Associations**

Finally, because web questionnaires published over the Internet can be integrated with graphics programmes such as Microsoft PowerPoint, a visualisation of the hypertext network can be automatically generated, with each page represented as a node in a network, and with hyperlinks represented as links between the nodes. Following the above discussion of memes as units of memory, that is, components or 'genes of meaning' from which the representations are constructed; such an output may be called a 'memetic network'.

Figure 16: A Memetic Net – A Visualisation of the Hypertext Network
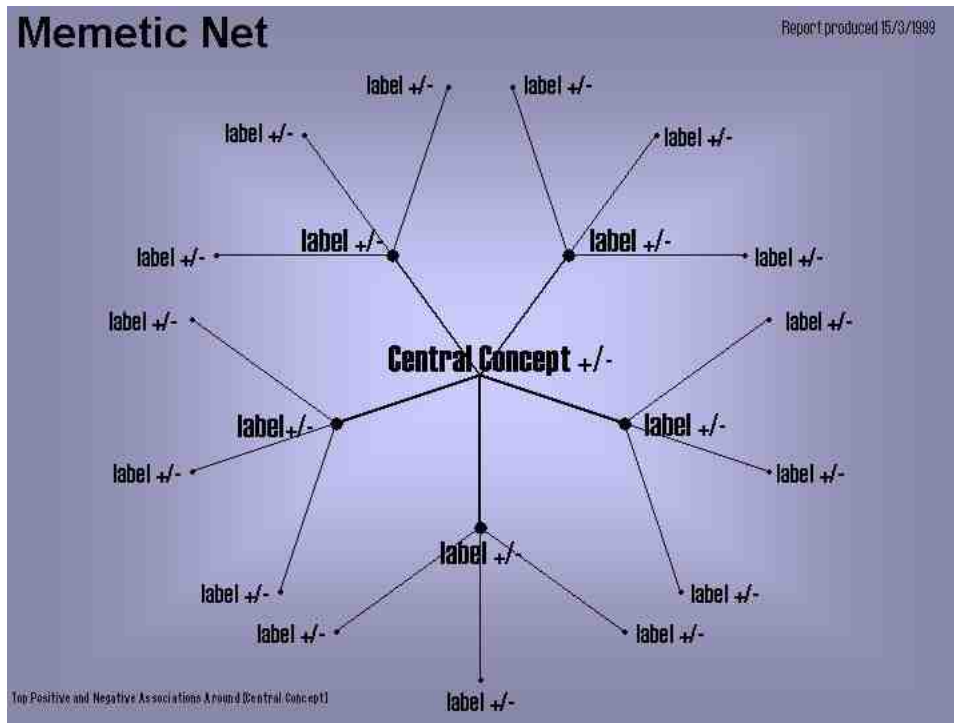
At the centre of the memetic network lies the core or central concept whose associative meaning is progressively unpacked in chains of associations. Each node has both a label, which is the name of a particular association page, and a polarity, which is the mean affective polarity, valence of the node attributed to it by participants. This memetic network effectively represents the collective set of associations made by a group of participants around a concept, such as, for example, suicide, and insofar as it represents the associations at the level of the group, no one individual made all the

associations, the memetic network could be said to represent a 'social mindscape[7]' of suicide.

Compared to Szalay and Deese's semantograph, this memetic net has the added feature of indicating the affective polarity of the associations, but unlike the semantograph, has the disadvantage of not indicating the relative dominance of the associations for the group. In other words, the memetic net gives no indication of which associations were selected most frequently by the group. One way of adding this potentially useful hierarchical dimension to the output is to extend the application of the logic of the associative model of memory upon which the tool is based. The neoassociationist model of memory introduced above suggests that as nodes become the object of focus, they are activated and the more they are used, the greater the activation. Accordingly, in the tool, as each associative page is selected, that is, activated, it could grow stronger. For example, if somebody selected and accessed a page labelled 'death', this would be recorded on a counter similar to that used on web pages to indicate the popularity of that page. In this way, the cumulative number of times an association was made could be recorded in an online database, Microsoft Access, which could automatically reorganise the pages based on their popularity after each association had been made. This would provide a hierarchical structure to the memetic net output, allowing associations around each node to be rank-ordered in terms of the relative dominance of each node to its 'parent' node. The practical upshot of applying

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[7] The sociologist Eviatar Zerubavel (1997) has used the term 'social mindscapes' as a title for his book outlining a model of cognitive sociology based on social meanings, social memories and the sociology of the mind and thought. The social mindscapes produced by this technique may be interpreted as operationalising his idea of 'sociomental' structures

this sorting rule is that the hypertext network would become adaptive, insofar as it would *learn* and restructure itself based on participants' input, allowing for a more sophisticated representation to emerge. The general idea of adaptive networks of linked data is currently being developed in a US government project to restructure and organise to allow for the most frequently used information to be accessed more quickly, by placing it at the top of the virtual heap (Bollen 1999). For the purposes of generating a social mindscape of suicide represented as a memetic net, the adaptive hypertext network would allow the representation to be structured clockwise by rank-order of dominance, made clearer in the output by the inclusion of a rank number before the node label. Further, by setting the parameters of the output to output only the top associations around any each word, this adaptive structuring of the network allowed for a representation of only the dominant, that is, most salient associations in a group.

Figure 17: Template for a Memetic Net with Hierarchical Structure
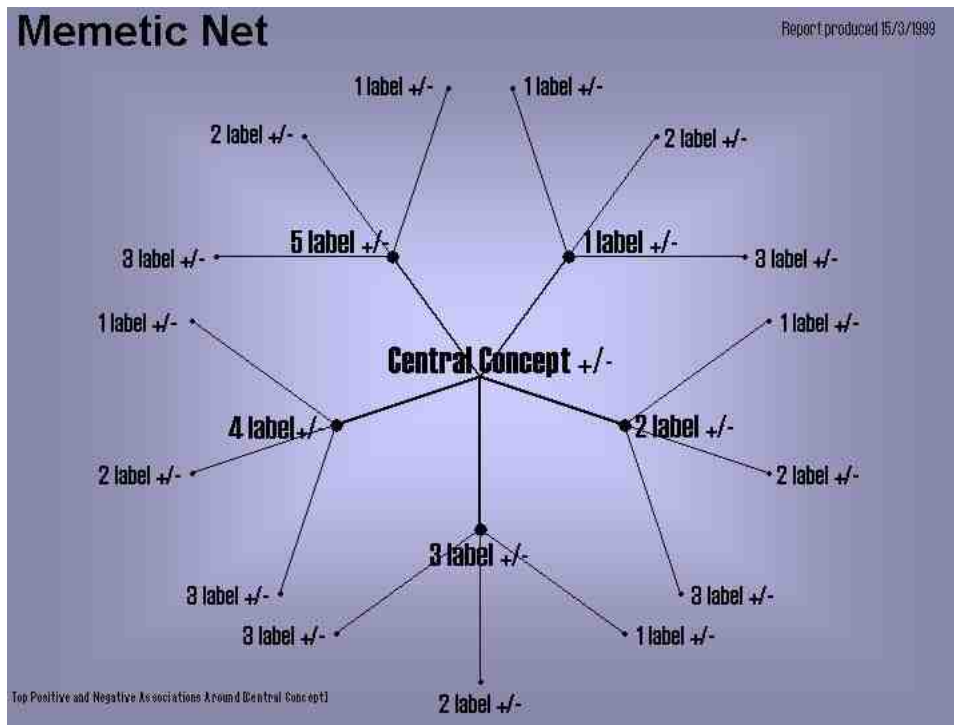
One practical problem that emerged from a prototype testing of this online version of the word association task was that as people played the list of associations grew longer such that it made selection from the list difficult, thereby provoking errors and multiple double entries. This was partially resolved by automatically resorting the lists of associations in order of the frequency they had been selected after each play so that people would see top associations first. To further alleviate the problem the rationale of the neoassociationist model of memory was applied again, and a maximum overall level of activation that the nodes would have to share was set. This was done by setting a maximum possible number of associations that could be made from each node. Specifically, as the nodes cumulatively became the object of focus, that is, were selected, their level of activation simply increased but only up until a predefined maximum number of associations around a

particular node had been introduced. At this point, any new association introduced would have to compete for inclusion in the network, by being subsequently selected before the weakest association already in the network are around the same node was selected. Whichever was selected first would inherit the activation level from the unselected association, which would perish and fall out of the network. Written longhand, this may sound unduly complicated, but basically all it entailed was a simple survival of the fittest competition between associations around each node, where new associations compete against the weakest existing associations and could replace them in a Darwinian struggle for survival. The reason for not directly replacing the weakest association with a new association was to prevent maladaptive, that is, rare mutants from entering into the network. For example, had 'death' been the weakest association around 'suicide', but had nevertheless been an association made by ten people, and then somebody added 'jelly bean', then 'death' would have been replaced with 'jelly bean' in a simple replacement mechanism. Instead, by first making 'jelly bean' a challenger to 'death', the winner to be decided by whichever is subsequently selected first by another participant, a quality control is integrated into the net. In fact, this is exactly the same quality control nature uses in evolution by natural selection, which works first by generating variations and then allowing them to be naturally selected, that is, selectively retained, based on their adaptive fit in an environment. In this way, it is possible to conceptualise the network as learning and evolving by a process of natural selection, selectively retaining

for output the 'fittest' associations while the weakest associations risk perish in a battle against new associations.

The only remaining issue to resolve from applying this Darwinian rationale was to deal with the potential situation arising in which a full set of associations around a particular node already has a new challenging association waiting to be integrated at the expense of the weakest association, and then *another* new association is suggested before either the weakest association or the new contender had been selected. In other words, what to do if a *list* of unselected challengers is produced. This possibility was accounted for by allowing multiple numbers of challengers to compete for selection, specifically a number equal to the maximum number of associations around a particular node. For example, a full node with five associations could have five challengers with new challengers entering at the top of the challenger list, and the oldest unselected challengers pushed out of the list when the maximum was reached. If any one of the challengers was selected before the weakest concept in the network it would replace it, and the weakest concept would fall back in this 'second division' challenger list.

The full specification of the adaptive hypertext network is described below.

Figure 18: Specification of an Adaptive Hypertext Network
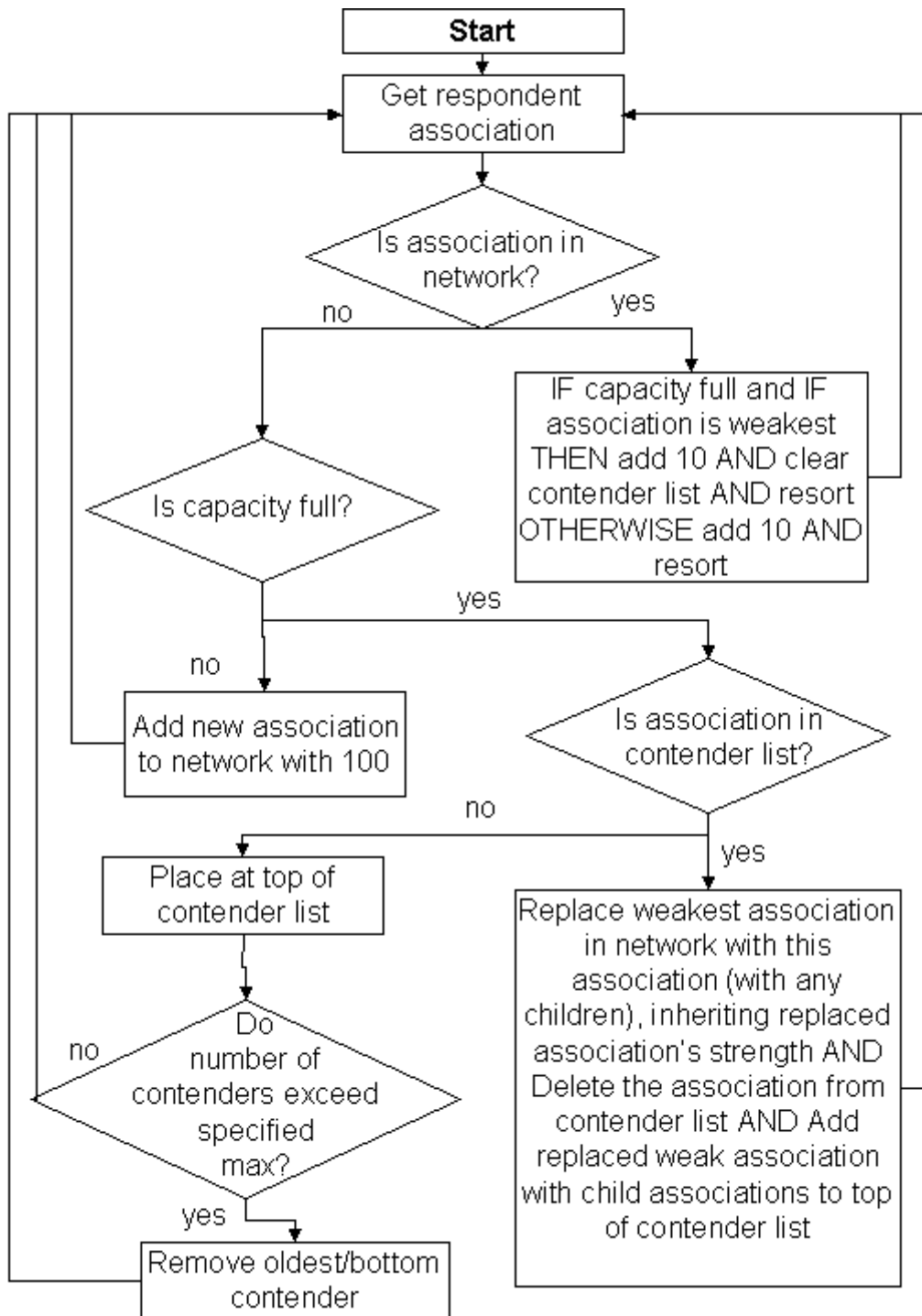
Although conceptually speaking, the architecture of the adaptive hypertext

network and output of a social mindscape as a memetic net was simple, the

custom scripts necessary to allow the online association game developed in

Microsoft FrontPage to process the input in this way required the assistance of a professional programmer. Based on my prototype and a full specification, my employer, Brand Genetics, agreed to sponsor a Brighton based software-programming company, The Software Department to write the scripts in return for the opportunity to use the research tool commercially[8].

The global parameters of the network, that is, the maximum number of associations from each node was left as a variable to be specified when setting up an online association game in order to allow different structures to be experimented with. However, following pilots, a default output was selected based on five first order associations plus five challengers each with three second order associations plus three challengers because this kept the number of possible options on a screen to a manageable maximum and erroneous double entries to a minimum.

In terms of how the game appeared to participants, each was invited to make three chains of associations around the core concept, with each chain comprising a first order immediate association and one association around this association. In other words, each participant was invited to make six associations in total and then indicate whether these associations evoked positive or negative feelings in a session that took a total of about two minutes to complete. Although capturing additional information was experimented with, such as a more standard questionnaire on perceptions of suicide, pilots found

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[8] Through Brand Genetics, the social mindscapes that the adaptive hypertext networks generate have subsequently been used by, among others, a UK Government anti-smoking campaign proposal (to unpack the meaning of smoking for people in deprived areas), BBC, American Express, and Unilever.

any extra demands significantly reduced the number of people willing to complete the exercise.

# 5.4 Generating a Social Mindscape of Suicide

The online word association game was published over the Internet in April 1999 and, following a period of beta testing in which people were invited to comment on its ease of use, a game around the concept of 'suicide' was finally published in September 1999. US Internet users over the age of eighteen were invited using the viral recruitment strategy used in the previous studies to play the game at their convenience over a two-week period. To access the game, participants had to indicate that they were over the age of eighteen, enter a password, and were reminded that the subject of the game, suicide was a potentially distressing subject. Anybody uneasy about playing the game was told not to participate. No incentives were offered, and attention was called to a hyperlink provided to a support group with an online presence, the Samaritans, if participants found the exercise in any way distressing. Finally, participants were told that they could change their mind about answering questions, and withdraw from the game at any time. A small text file, called a cookie, was written to the computer hard drive of participants to prevent multiple plays by the same participant.

5.4.1 Results

Two weeks later, at the end of September 1999, 324 people had completed the game, with each participant making six associations. This was a far greater number of participants than expected based on the previous research, a finding perhaps due to the appeal of participating in an online word

association task as opposed to a more standard piece of research. This participation level meant that the adaptive hypertext network evolved through some 1944 iterations.

Figure 19: Social Mindscape of Suicide – 324 Adult Net Users in the US, September 1999.
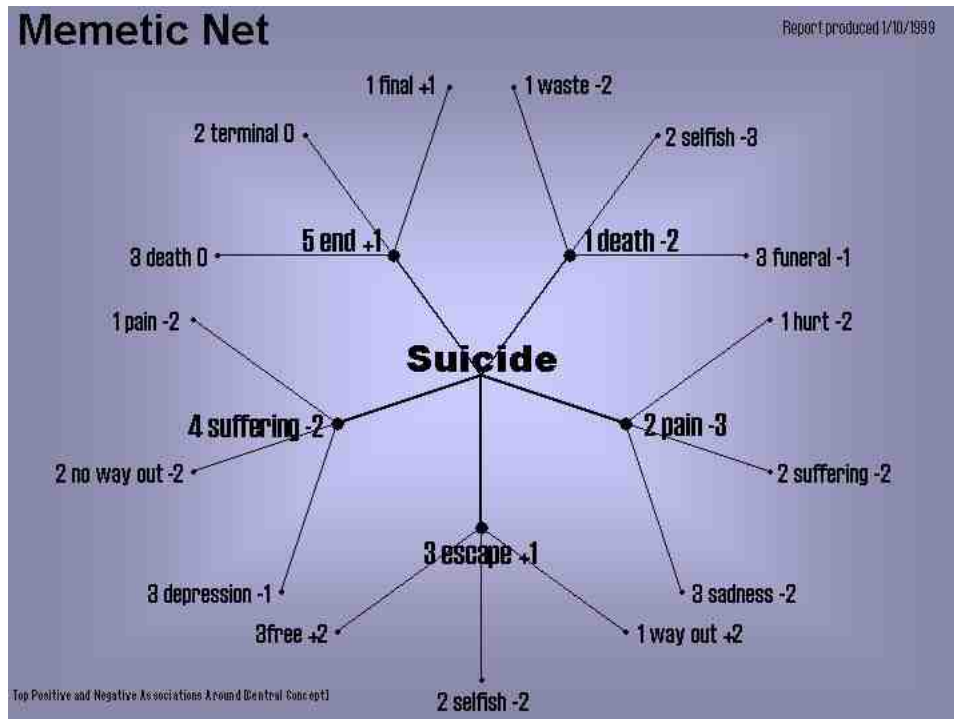

The social mindscape represented by the memetic net describes the dominant set of associations around suicide unpacked into their own dominant associations that capture the associative meaning of suicide for the group of participants. As can be seen from the output in Figure 19, the strongest association was 'death', followed by 'pain', 'escape', 'suffering' and 'end'. Interestingly, the associative meaning of death in the context of suicide unpacks into the negative terms of 'waste', 'selfish' as well as 'funeral'. Also, and perhaps surprisingly for a term that one might expect to have negative connotations, two of the five top associations were not overall perceived as

negative; 'escape' and 'end', which unpack into the positively rated terms of 'free', 'way out', and 'final'.

In terms of immediate practical implications for the socio-cognitive model of media suicide contagion developed here, these results might be interpreted as suggesting that any risk of contagion for US Net users considering suicide might conceivably be reduced if suicide representations were explicitly *not* framed in terms of the positive meanings of suicide appearing in the mindscapes. Equally, the model might suggest that the framing of suicide representations in terms of meaningful negative associations such as 'pain', 'suffering', 'selfish' and 'waste' could prime negative thoughts around suicide and so could, in principle, perhaps reduce any risk of contagion. However any such interpretation would be contingent on whether the social mindscape provided some kind of reliable insight into the dominant set of meanings of suicide for this population. To investigate the reliability of the mindscape, a second game was set up to continue capturing responses during the month of October in order to generate a second network that could be compared with the first. 170 people participated in the evolution of this second social mindscape.

Figure 20: A Second Social Mindscape of Suicide – 170 Adult Net Users in the US, October 1999.
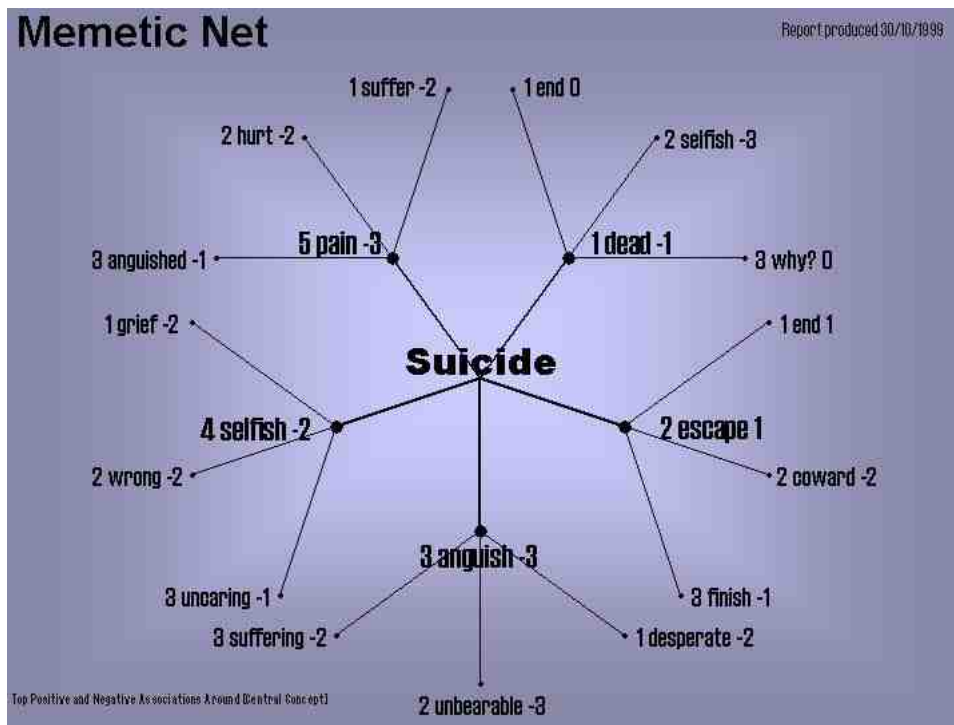
What is apparent from the two outputs is their overall conceptual similarity, despite the difference in the labels appearing on the nodes: death or dead appears in both as the most dominant association, and the remaining directly associated concepts of pain, suffering (anguish, pain), and way out (escape) also appear in both nets. The one first order association of 'selfish' that appeared as a direct association in the second mindscape, but not on the first, nevertheless appeared as a second order association in the earlier net. In fact, of the 21 associations in the second social mindscape, the only new associations to appear were 'cowardly' and 'wrong', giving a significant conceptual similarity in the order of 90% between the two.

However, it should be noted that the hierarchical structure of the two outputs *was* somewhat different, although the top three first order associations were

consistent between the two networks, with two and three simply switching places. However, because of this variability, perhaps a more useful way to interpret the social mindscape would be more of a narrative unpacking the meaning of suicide for the group to be interpreted globally rather than atomistically. Indeed, a theoretical case will be made for such an interpretation by situating the output within the context of grounded theory following a brief empirical assessment of the validity of the mindscape.

5.4.2 Assessing the Validity of the Social Mindscape of Suicide

Although the generate–regenerate investigation of reliability of the social mindscapes indicated a degree of robustness, this did not allow for the assessment of the degree to which the emergent model was meaning-adequate, that is, the degree to which there was a correspondence between the meaning of the model and the meanings employed by those researched. One way to assess this question of validity is to ask for participant validation of the model by asking if the output is, for them, a meaningful representation of suicide. The idea behind participant validation is that the interpretations provided by a model should be recognisable when presented to the participants in the study or to others within a similar context (Pidgeon 1996). If participants agree with the researcher's account, then it may be possible to attach some degree of confidence to the model. To this end, participants participating in the generation of the second mindscape were taken to a simplified representation first mindscape (without polarity or ranking) automatically after playing the association game, and asked about the validity

of the mindscape. Specifically, the 170 participants in this second study answered the following question:

'Please take a minute to look at this mind map of associations around suicide and the associations around those associations. Please indicate whether you think that, overall, the map captures the important associations around suicide'

Figure 21: Assessing the Validity of the Social Mindscape of Suicide

Sucide Mindscape: Paticipant Validation
'In your opinion, does the map capture the important associations around suicide?'
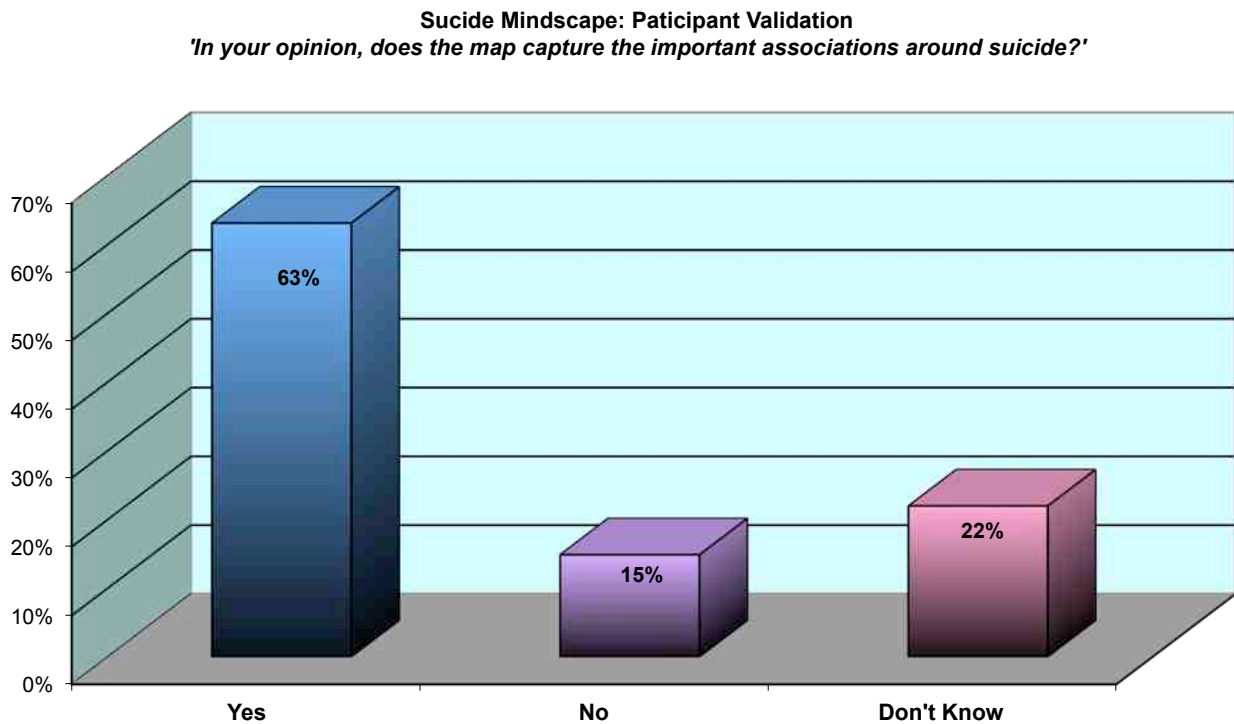
141 of the 170 participants actually answered the question, and of these only fourteen percent thought that the mindscape generated earlier had not captured the important associations. Against an absolute standard of one hundred percent validity, this certainly falls short. However, in practice the fact that the vast majority of participants agreed that the collective view of the

mindscape did reflect their idea of suicide may be seen as indicating a satisfactory degree of validity.

5.5 Discussion: Social Mindscapes as Grounded Research

By harnessing the capacity of the Internet to capture and process data iteratively and inductively, the online word association game may be seen as having generated social mindscapes of suicide that captured the dominant meanings of suicide for the researched group by structuring them into an associative memetic network. Although the process of generating these social mindscapes may be seen as based on a specific adaptive neoassociationist model of memory and pertinent to the model of priming developed here, it is also possible to understand the mindscapes more broadly as examples of grounded theory. The reason for situating the research tool within this recognized research framework is not simply for ease of understanding, but to illustrate that what might appear as a rather specific and indeed technocratic process is actually an application of a established process of grounded theory production.

The idea of grounded theory was first introduced by Glaser and Strauss (1967) to denote an inductive and iterative qualitative research process characterised by *data-guided theory generation*, in contradistinction to the *theory-led data production* of hypothetico-deductivism. The goal of grounded theory was to generate theoretical constructs 'grounded' in, that is, 'fit', the data, rather than impose such constructs from the outset by *a priori* theory. The grounded theory approach, as described by Glaser and Strauss was an

explicit attempt to provide an alternative interpretive research framework to what the authors felt was an increasing hegemony of sterile and 'impoverished' positivism in the human sciences, where the sole function of data and analysis was to test derivative deductions from a few nomothetic grand theories typically insensitive to local situations and meanings, but whose results were nevertheless often flaunted as immutable empirical facts rather than tentative working hypotheses. Instead, grounded theory proposed a more creative and dynamic conceptualisation of the research process, that while more modest and idiographic, sought to generate theoretical models inductively from what was perceived as to be an often dislocated and multifaceted phenomenal world

> *'…it is therefore helpful to think of grounded theory strategies as offering ways into the maze of a fractured and multiseamed reality that is infused with multiple and often conflicting interpretations and meanings' (Pidgeon and Henwood 1996: 86)*

To achieve this, Glaser and Strauss proposed an iterative two-step research process in which successive rounds of data collection and data analysis allowed for the progressive emergence and adaptation of theoretical categories. The way that this is achieved is essentially through a process that allows the data not only to be initially organised (open coding), but for the emerging categories of meaning to be flexible enough to integrate new themes and to be indexed both to each other ('axial coding') and critically to a 'core category' ('selective coding') (Becker 1993). Through such a process, the idea is to generate a meaningful theoretical model inductively, based on its 'fit' with

the data through an iterative and interactive loop of data collection and data analysis (Glaser and Strauss 1967).

Although grounded theory has been developed and operationalised in a number of ways, and although the rationale of the process is that it is essentially data-guided rather than process-driven, Pidgeon and Henwood (1996) have summarised the approach schematically as follows:

Figure 22: A Grounded Research Procedure (adapted from Pidgeon and Henwood 1996)

5.5.1 Social Mindscapes as Grounded Theory

The affinity of social mindscape generation to the process of grounded theory production is immediately apparent insofar as both use an iterative and inductive technique based on adaptive coding to allow a model to evolve around a central theme or category. However, there are several distinguishing features of the mindscape production that, depending on one's point of view, may be seen as enhancing the research process.

Firstly, in terms of the data collection method, the online associative technique of social mindscape generation offers an efficient and arguably less biased approach than the face-to-face 'directed conversation', that is, the very loosely structured open-ended interview technique that is typical of grounded research (Pidgeon and Henwood 1996). An hour-long interview will generate vast tracts of data, out of which a labour and time-intensive transcription and sorting exercise attempts to extract only that information considered to be most pertinent. By contrast, the continued and continuous associative

technique is firmly anchored around the focus of the research, in this case suicide, and captures only salient information. With respect to potential interviewer bias in data collection, response elicitation by association is not hampered by the possibility of leading questions, nor the prospect of making assumptions about meaning that are present in directed conversation. The anonymous nature of the online approach also avoids the potential of interviewer bias.

Once the first set of data has been generated, labelled and referenced, Pidgeon and Henwood describe how initial analysis proceeds in a typical offline grounded research project:

> *'the next task is to construct a second version of these data that will allow sorting and re-representation of the material as the interpretation develops. Some researchers achieve this by first photocopying or word processing the original material and then highlighting, cutting and pasting when similar themes occur' (Pidgeon and Henwood 1996:91-92)*

It is here that the self-organising capacity of social mindscapes provides an efficient solution to achieving this re-representation of the data that allows classes of similarities and diversities to be brought to the attention of the researcher. Further, instead of developing an index system based on a coding scheme determined by what the researcher considers to be present in the participant data, the memetic network allows participants to inductively generate their own coding system through the online association game that describes and unpacks the meaning of a concept. Thus, instead of constructing an indexing system by starting at the first paragraph of a transcript by asking, 'What categories, concepts or labels do I need in order to

account for what is of importance to me in this paragraph?' and then 'When a label is thought of, it is recorded as the header on a 5-inch by 8-inch file card' (Pidgeon and Henwood 1996: 92), the memetic network automatically generates and structures classes based on the relevance given by participants themselves.

Once an initial indexing system has been produced, the next task of offline grounded research procedure, 'category integration,' is also significantly facilitated by the nature of memetic networks to link and describe graphically a structure of meaning:

> *'Later stages of analysis are also likely to involve attempts to integrate the emerging categories by creating links between them. In addition to exploring the links suggested in the course of coding and memo-writing, it is often useful to sort and group sets of related concepts. This might involve drawing up various forms of diagrammatic representations, such as matrices or flow charts, to illustrate salient links between concepts.' (Pidgeon and Henwood 1996:98-99)*

As with the offline grounded approach, subsequent rounds of data sampling in the memetic network inform the evolutionary loop of generate and select in a manner that allows the categories and model to adapt to the data. However, with the online version, this process of adaptation is inbuilt, where unused and weak categories drop out of the model, while those that are useful are progressively explored and unpacked.

Figure 23: Social Mindscapes from a Grounded Perspective
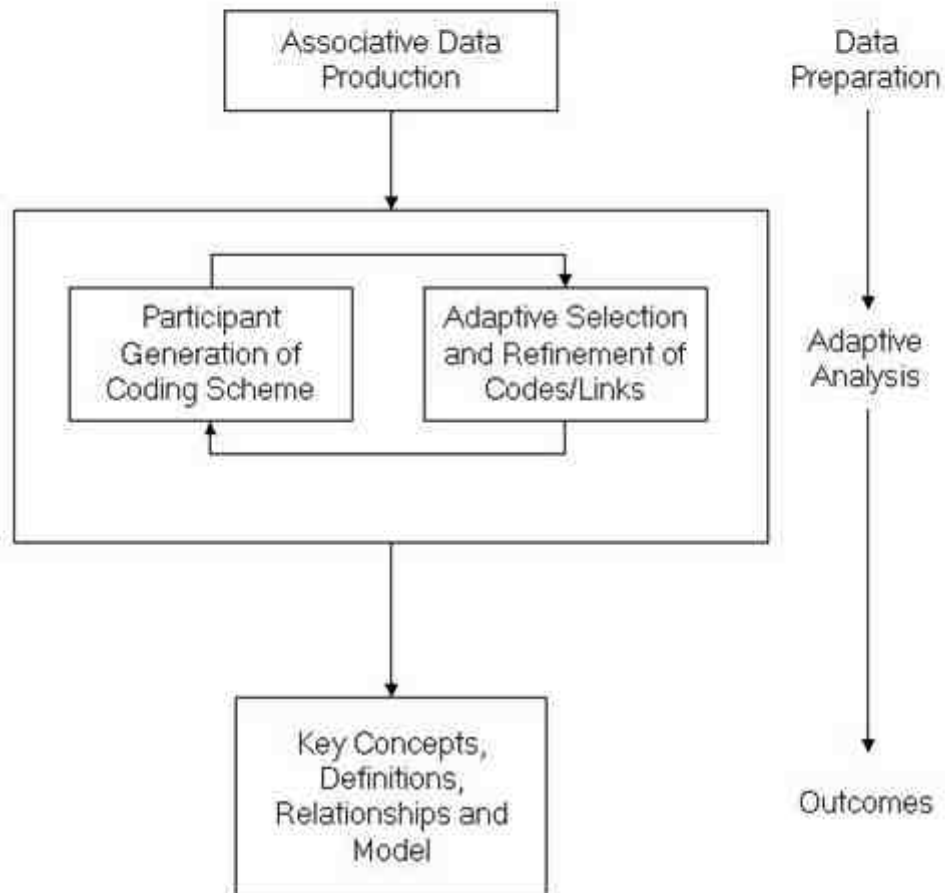
5.5.2 Some Weaknesses of Social Mindscapes

These features of this online tool for social mindscape generation, interpretable as useful accompaniments to grounded theory production may

also be interpreted as limitations. For example, the standardised and impersonal nature of the associative technique of data collection means that outcomes of the research will be restricted to a lexical understanding of a concept, and the researcher will miss any potentially interesting non-verbal cues or insight into meaning detectable from body language. Furthermore, the imposition of one particular form of response elicitation (association) and one particular organising principle (adaptation), means that an inflexibility is hardwired into the tool that runs contrary to the ethos of a data-guided model generation in grounded research. Whatever the focus of research, social mindscapes are, as described here, by definition associative networks, and so will always produce an associative network quite irrespective of the data, even in cases where an alternative grounded analysis may be considered more appropriate. Whilst capturing associations may be useful in generating heuristic insight to meaning, the truncation of meaning in association may involve a loss of richness in semantic texture, and while associations may unpack a depth of meaning not readily available from some other techniques, they require like all research, interpretation and this interpretive task is made arguably more difficult by the ambiguous and imprecise nature of associations. Equally, the reduced control over responses means that associative techniques are not a particularly focused method of research.

Further, the parameters of the network specifying its capacity and learning rules cannot be interpreted as anything other than *a priori* and arbitrary impositions on the data, thereby forcing the production not only of a certain kind of output, but also through a certain kind of process. Despite this

inflexibility, it is perhaps unfair to criticise the social mindscapes for what must the case for all research which is that *some* a priori processes and organising principles are a necessary condition for any empirical investigation of the social world because, without such constructs, it would not be possible to either define what counts as legitimate data, nor to organise meaningless data information into a meaningful corpus. In this way, although it is not the case that social mindscapes are the product of pure atheoretic inductivism, capturing some unbiased, untainted and 'true' reflection of meaning employed by a group, the assumptions made are explicit, simple, and consistent. It is for this reason that the model can make some claim for 'strong objectivity' (Harding 1991) where strong objectivity denotes the making public of the interpretive processes used in research and contrasts with 'weak objectivity' in which necessary theoretical bias and interpretation is obscured under the guise of a putative independent and direct access to some unchanging ultimate reality.

One final feature of social mindscapes that from a grounded theory perspective may be considered a limitation should be noted. This is that the models capturing meaning represented in the mindscapes are participant-driven insofar as categories are introduced and unpacked by participants rather than imposed by *a priori* theory by the researcher. While this may seem entirely continuous with the rationale for grounded theory, it does mean that any interplay between theory and data can only occur when the model is interpreted rather than as it is generated. This may be considered problematic to the researcher who wishes to inject abstract theoretical categories and

concepts into the analysis during the generation of a model on the basis that although such constructs may have little meaning-adequacy, they may be theoretically important and useful heuristic devices for situating the research in a wider context. For example, it is unlikely that concepts such as anomie and alienation would be introduced and selected in a mindscape around suicide, even though such concepts may be useful theoretical edifices in the generation of a model.

In sum, in addition to providing means for capturing the shared meanings of suicide for an online group that will be useful in assessing the empirical plausibility of the socio-cognitive model of media suicide contagion developed here, it is hoped that research tool developed for this purpose may be of some more general use in grounded research and more generally research that wishes to capture and provide insight into meanings employed by particular groups. To this end, an open account has been set up at www.mememapping.com where the tool resides for researchers wishing to set up and manage studies using the tool. The username is 'sussex' and password is 'university'. Further, a CD with the Visual Basic code used to produce the active server pages that generate and sort the hypertext network is included in the Appendix of this report.

6.0 A Socio-Cognitive Model of Media Suicide Contagion

6.1 Where are we?

The media suicide contagion hypothesis, the idea that representations of suicide in the media may be used by some people in a manner that influences their suicidality, is contentious. A critical review of the empirical evidence found that, while sometimes suggestive of such a putative phenomenon, the evidence is less than compelling mostly because of a combination of methodological problems and a lack of any theoretical model to guide and interpret research.

In response to this, a socio-cognitive model of media suicide contagion has been constructed using mechanisms developed in social cognition theory, specifically those of priming and modelling, which may be conceptually integrated into a more general socio-cognitive model of influence by media framing. Specifically, the possibility of media suicide contagion may be understood in terms of how positively framed media suicide representations may evoke a non-random subset of possible meaningful associations around suicide, thus increasing the salience of those meanings in the minds of those exposed to them. For the vast majority of people not caught in any unresolved dilemma over whether to act suicidally, this priming may have no effect on decisions, but for any such conflicted individuals the primed meanings may colour suicidal thought and perceptions, thereby possibly influencing a suicide decision. Any influence of this relatively automatic priming may then be compounded by a possible deliberate use of the media representation to

update internal models of the meaningful consequences of suicide if those representations are perceived as more positive than anticipated, thereby potentially and indirectly informing suicide decisions. In short, the idea developed here is that through a nested hierarchy of influence consisting of priming and modelling, exposure to positively framed media representations perceived as meaningful could, in some distressed individuals in situations experienced as potentially suicidal, modify interpretations of the meaning of suicide and the situation and thereby inform suicide decisions.

The theoretically informed research hypothesis that follows from this model is that a media representation, framed meaningfully in terms of the dominant set of positive or negative meanings describing suicide through a priming and modelling mechanism may inform interpretations of one's own suicidality and thereby colour suicide decisions. This section will seek to explore this hypothesis safely and with some degree of internal validity using a new research technique made possible by the Internet.

7.0 Media Suicide Contagion: New Media, New Evidence

7.1 Framing Media Representations with Frames

Suicide, as understood here, refers to the manifestation of subjective intent whose object of focus in self-inflicted death.   The theoretically informed research hypothesis that follows from the socio-cognitive model developed here is that a media representation, framed meaningfully in terms of the dominant set of positive or negative meanings describing suicide through a priming and modelling mechanism may inform interpretations of one's own suicidality and thereby influence suicide decisions.

The essential dilemma for operationalising any research wishing to explore the empirical plausibility of this model is one that will be now familiar to the reader and one that is generic to all suicide contagion research. In order to reduce problems of internal validity, a prospective research design is desirable, but this raises the possibility that the research may contribute to distress and suicidality of participants. The suggestion that will be made here is that the emergence of the Internet as a viable research medium provides one partial solution to this dilemma.

Unlike traditional media, such as the press, books, television, theatre and cinema in which suicide representations consist of a one off broadcast, performance or publishing, the Net is a source of continuous 'web casts', all accessible at the click of a mouse, twenty four hours a day, seven days a week from anywhere in the world. What is particularly interesting from a researcher's point of view in assessing the possible influence of this emerging

medium is that the web represents a flexible data collection medium as well as an object of research. The online research tool for generating social mindscapes of suicide, and the two more standard web studies reported above provide examples of just some of potential of the web that may be harnessed by researchers. A further potential of the web that may be used to address ethical qualms involved with assessing the empirical plausibility of models of media suicide contagion lies in what is know as 'frames page' technology.

A 'frames page' is a special kind of blank HTML (hypertext mark up language) page that divides the window of a web browser, such as Microsoft Internet Explorer, into different areas each called a frame. The set of frames making up this blank page is called a 'frameset'. The point of frames pages is that each of the frames can then be filled with independent web pages with different addresses, allowing people to browse different web pages within one browser window. For example, a web page from a site with an index of all other pages at the site could fill one frame, and the hyperlinks on that index page could bring up the relevant pages in another frame. This is remarkably useful for a large site, allowing people to navigate around a large number of web pages with relative ease. To illustrate what a frame page looks like, the example below shows a browser window split into two frames; on the left is an index indicating various hyperlinks, which when clicked change the page on the right.

Figure 24: A Simple Frame Page
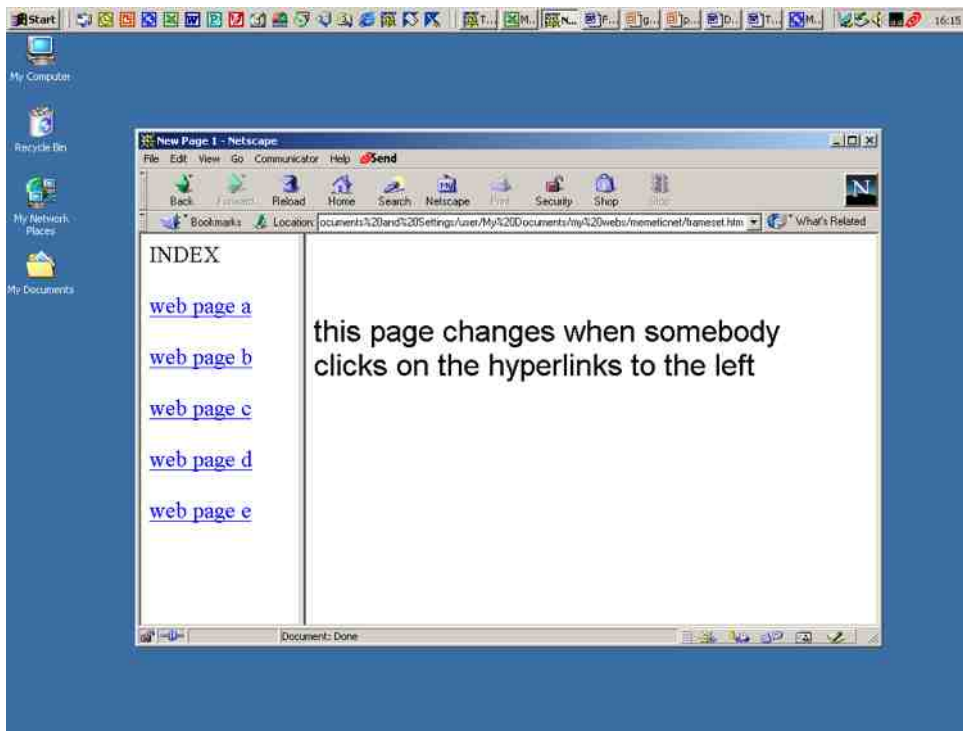
The possible utility of this capacity for researchers is that framing allows for the investigation of published material on the web in a new way. Using a frameset, it is possible to call up a certain third party web page to be the subject of investigation in one frame, while providing instructions or even a questionnaire for participants to respond to in another frame.

In the context of the current research, frames page technology makes it possible to quite literally frame a representation in different ways, by defining frames around the target page that provide a particular interpretation of the representation. For example, a suicide note published to the web could be literally 'framed' in this way by having the note appearing below, or alongside, another frame that describes positive or negative themes relevant to suicide. What is useful about such an approach is that it does not actually involve the

researcher publishing suicidal material, it simply provides an opportunity to interpret and capture interpretations around existing suicide representations.

The practical application of this here means that by framing a suicide representation in different ways for different people, then the possibility of investigating any potential influence of framing is raised. For example, an experimental design could be developed in which people accessing a site to see a suicide representation such as a suicide note could be randomly assigned to either a neutrally framed or negatively framed version of the representation. By capturing perceptions around suicide following exposure in a web questionnaire, any relative influence of the framed notes could be investigated. If a third group also responded to the web questionnaire but before seeing the note, then a more general assessment of any influence of seeing the note could be made. Additionally, by using frames in this way, it would be possible to provide a permanent hyperlink to an online support group for any viewers who might find the page distressing.

The problem with such an approach is that the people must know the web address of the frameset from which representations are available. Further because the frameset is itself simply a blank page that pulls together other existing pages, anybody wishing to see, for example, the suicide story of Michael Hutchence lead singer of the popular rock group INXS, could access the story directly and bypass the frameset. Although the latter point is unavoidable, the former can be partially addressed by registering a website

address and submitting to Internet search tools[9] and related websites which would increase the chances that anybody looking for such a representation would find a hyperlink to the frameset. Based on the possibility of investigating media suicide contagion in this way, the following study was planned and executed over 1999, with the fieldwork commencing in November 1999.

7.2 Background to a Suicide

> *'Frances and Courtney, I'll be at your altar. Please keep going Courtney, for Frances for her life will be so much happier without me. I LOVE YOU. I LOVE YOU.'*
>
> Suicide note. *Kurt Cobain, musician, d. April 8, 1994*

Kurt Donald Cobain was the lyricist and lead vocalist in the successful and popular rock band, *Nirvana*, one of the definitive 'grunge' bands that influenced contemporary music scene in the 1990s. Cobain was born on 20th February 1967 in a small town, Aberdeen, Washington, a hundred miles to the south of Seattle, in the United States[10].

Inspired by the UK band *Sex Pistols* and the nihilistic post-punk band *Joy Division*, Cobain formed the band *Nirvana* in 1986 with his bass-playing friend Krist Novoselic, later to be joined by drummer Dave Grohl. Success for the band was not immediate, and they struggled until they were signed by a major

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[9] A guide to search tools and research on the Internet can be found in my book published by NOP consumer research (Marsden 2000b) on this subject, but essentially search tools are either search engines (e.g. Hotbot) that use web bots, virtual creatures that roam the web and automatically indexing pages, or directories manually compiled by humans (e.g. Yahoo!). This process can be sped up by pro-actively submitting a web page to these search tools. When people use these tools, a list of hyperlinks relevant to search query is provided by the tool to relevant pages.

[10] This description of the background and events around Cobain's suicide has been compiled using some of the extensive material, including press reports, interviews with Cobain and Love and testimonials, held at the Nirvana fan club website www.nirvanaclub.com, one of many sites dedicated to Cobain and the group. Members of the fan club also participated in a number of online interviews in chat rooms that were supplemented with email correspondence. The other source was the biography of Cobain and the group Nirvana *Come as You Are: The Story of Nirvana* by M. Azerrad 1993.

label, Geffen in 1991, and released their second album *Nevermind.* This album contained a track called *'Smells Like Teen Spirit"* that transformed Nirvana from an alternative punk rock group with a small but dedicated following to mainstream pop icons with celebrity status. Cobain, known for his torn jeans, grungy T-shirts, primal screams, power chord slams and lyrics of alienation and desperation became a recipe for commercial success and the album sold ten million copies worldwide, making $550 million and turning Cobain and fellow members of *Nirvana* into millionaires.

Managing success was something Cobain freely admitted in interviews to finding difficult, and an increasing dependency on heroin, a mediatised and stormy marriage with punk rock singer Courtney Love, and a brief loss of custody of their child Frances as 'unfit parents' was followed by a suicide attempt on tour in Rome in March 1994. Whilst he was recovering from his overdose of tranquillisers and champagne back at his home in Seattle, Love called the police when Cobain locked himself in a room with a gun. As a result of this incident a number of firearms were confiscated from the property and Cobain was persuaded to register at a drug rehabilitation centre in Los Angeles on March 28. However, four days into the program, Cobain was reported missing from the centre, later to appear in police records as having purchased a shotgun in the suburbs of Seattle.

7.3 The Suicide

On Friday 8th April 1994, an electrician called to install a security system at Cobain's Seattle home, and saw from outside what appeared to be Cobain lying inside on the floor. On arrival, the police found Cobain dead with a

shotgun still pointing at his face and a note written in red ink addressed to Love and their nineteen month old daughter Frances. The initial police report mentioned this 'suicide note ... apparently written by Cobain to his wife and daughter, explaining why he had killed himself'.

Love learned about her husband's apparent suicide in a drug rehabilitation centre she herself was attending after having being admitted to a Los Angeles hospital for a drug overdose the previous day. The medical examiner concluded that the cause of death was indeed a self-inflicted shotgun wound, and one that had occurred three days earlier on April 5th. Cobain, twenty-seven years of age, had laid a shotgun barrel across his chest, pointed it at his head, and pulled the trigger. On the death certificate, the cause of death was indicated as a 'perforating gunshot wound to the head (mouth)'. The autopsy also revealed that Cobain had three times the lethal dose of heroin (1.52mg/l) in his blood.

7.4 The Suicide Notes

News of Cobain's death made the headlines of the music and general press and television not only in the US but also around the world. On Sunday 10th April 1994, a mass candlelit vigil was held in Seattle for Cobain, attended by some 5000 fans. During this vigil a recording of Love reading and commenting on Cobain's suicide note, a transcript of which can be found below, was played (note text indicated in bold).

'I don't know what to say. I feel the same way you guys do. If you guys don't think... to sit in this room where he played guitar and sang, and feel so honored to be near him, you're crazy... Anyway, he left a note, it's more like a letter to the fucking editor. I don't know what happened. I mean it was gonna happen, but it could've happened when he was forty. He always said he was gonna outlive everybody and be a hundred and twenty. I'm not gonna read you all the note 'cause it's none of the rest of your fucking business. But some of it is to you. I don't really think it takes away his dignity to read this considering that it's addressed to most of you. He's such an asshole! I want you all to say "asshole" really loud.' [Crowd yells]

[Reading from Cobain's Note] **This note should be pretty easy to understand. All the warnings from the punk rock 101[11] courses over the years since my first introduction to the shall we say, ethics involved with independence and embracement of your community, it's proven to be very true. I haven't felt the excitement of listening to as well as creating music, along with really writing something, for too many years now. I feel guilty beyond words about these things. For example, when we're backstage and the light go out and the roar of the crowd begins, it doesn't affect me the way in which it did for Freddie Mercury, who seemed to love and relish the love and adoration of the crowd.**

Well, Kurt, so fucking what? Then don't be a rock star, you asshole!

Which is something I totally admire and envy. The fact that I can't fool you, any one of you, it simply isn't fair to you or to me. The worst crime I could think of would be to pull people off by faking it, pretending as if I'm having 100% fun.

Well, Kurt, the worst crime I can think of is for you to just continue being a rock star when you fucking hate it, just fucking stop!

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[11] A '101' course is a US generic label for an introductory college course. Cobain's phrase, indicating that he found himself ill prepared for success, became famous 'If there was a rock star 101 course, I'd really have, like, to take it'

Sometimes I feel as I should have a punch-in time-clock before I walk out on stage. I've tried everything within my power to appreciate it, and I do, God believe me I do, but it's not enough. I appreciate the fact that I and we have affected and entertained a lot of people. I must be one of those narcissists who only appreciate things when they're alone. I'm too sensitive. I need to be slightly numb in order to regain the enthusiasm I once had as a child. On our last 3 tours I've had a much better appreciation of all the people I know personally, and as fans of our music, but I still can't get out the frustration to gather the empathy I have for everybody. There's good in all of us and I simply love people too much.

So why didn't you just fucking stay?

So much that it makes me feel just too fucking sad. Sad little sensitive unappreciative Pisces. Jesus, man.

Oh shut up, bastard. Why didn't you just enjoy it? I don't know. Then he goes on to say personal things to me that are none of your damn business; personal things to Frances that are none of your damn business.

I had a good marriage, and for that I'm grateful. But since the age of seven, I've become hateful toward all humans in general only because it seems so easy for people to get along that have empathy.

'Empathy?'

Only because I love and feel for people too much I guess Thank you all from the pit of my burning nauseous stomach for your letters and concern during the last years. I'm pretty much of an erratic moody person and I don't have the passion anymore. Peace, Love, Empathy, Kurt Cobain.

And there is some more personal things that is none of your damn business. And just remember: this is all bullshit... And I'm laying in our bed, and I'm really sorry. And I feel the same way you do. I'm really sorry you guys. I don't know what I could have done. I wish I'd been here. I wish I hadn't listened to other people, but I did. Every night I've been sleeping with his mother, and I wake up in the morning and think it's him because his body's sort of the same.

I have to go now.'

7.5 No Contagion?

On the day Cobain's body was found, David Jobes, a psychologist from Washington D.C. was attending a conference on suicide prevention. In an interview with the press he reported the initial reaction of delegates: 'We just looked at each other and said, "This is going to be a disaster." We were convinced,' (Jobes interview in Klass 1996). However, an investigation by Jobes and colleagues into suicides occurring in the Seattle area in the weeks following Cobain's highly mediatised suicide, found that of 18 suicides, only one could be associated with Cobain's death (the suicide was a Nirvana fan who had attended the vigil) (Jobes, Berman O'Carroll, Eastgard, Knickmeyer 1996). The research concluded that the lack of apparent contagion could be accounted for by a number of factors, principally that:

a) media coverage focused on Cobain's troubled past, and while according the musician with great talent, condemned the act as one of stupidity

b) the reporting of the use of a shotgun and the need to use dental records to identify Cobain may have acted against any romanticisation of the suicide

c) crisis centres, which experienced a significant increase in calls following the suicide, supported organised community action and ran an effective awareness campaign

d) both Cobain's mother and Love publicly denounced him and condemned the suicide[12].

7.6 The Suicide Note Propagates over the Internet

Soon after Cobain's suicide, hundreds of web pages were published by fans as 'virtual shrines' to Cobain. A leading search engine (Google.com) indicated in October 1999 that there are currently over 7000 web pages discussing Cobain and his suicide, 500 of which mention or publish either a transcript of Love's reading of the suicide note, or a transcript of the note held by police, or scanned photocopy of the original suicide note. It would seem that these notes continue to be popular, with web page owners reporting that they are accessed hundreds of times every month.

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[12] N.B. However, a number of teen suicides have subsequently been linked to Cobain's suicide. For example, some three years after Cobain's death in May 1997, in the town of Somain, near Lille, in northern France two girls aged 12 and 13, Valentine and Aurelie left suicide notes professing their love for Cobain, and shot themselves in a manner similar to Cobain (Errico 1997). In covering the story Le Monde (Davet 1997, Pereira 1997) cited a number of other teen suicides associated with Cobain: In, in July 1994 in USA two teenage fans of Cobain, aged 14 and 15, died by shooting themselves with a sawn-off shotgun in a similar manner to Cobain. In Lebanon the following year in May 1995, a 16 year-old boy shot himself in the head. On the walls of his bedroom, covered with posters of Kurt Cobain, he had scrawled slogans encouraging suicide. In Italy in October 1996, a young man aged 17 threw himself from the 8th floor of a building. In the letters he left for family and friends he referred to Kurt Cobain and his suicide note.

Figure 25: Cobain's Suicide Note

Boddah

[handwritten note, largely illegible]

Figure 26: Transcript of Cobain's Suicide Note

To Boddah[1] [?] pronounced

Speaking from the tongue of an experienced simpleton who obviously would rather be an emasculated, infantile complain-ee. This note should be pretty easy to understand.

All the warnings from the punk rock 101 courses over the years, since my first introduction to the, shall we say, ethics involved with independence and the embracement of your community had proven to be very true. I haven't felt the excitement of listening to as well as creating music along with reading and writing for too many years now. I feel guilty beyond words about these things.

For example, when we're backstage and the lights go out and the manic roar of the crowds begin, it doesn't affect me the way in which it did for Freddie Mercury, who seemed to love, relish in the love and adoration from the crowd which is something I totally admire and envy. The fact is, I can't fool you, any one of you. It simply isn't fair to you or me. The worst crime I can think of would be to rip people off by faking it and pretending as if I'm having 100% fun.

Sometimes I feel as if I should have a punch-in time clock before I walk out on stage. I've tried everything within my power to appreciate it (and I do, God, believe me I do, but it's not enough). I appreciate the fact that I and we have affected and entertained a lot of people. It must be one of those narcissists who only appreciate things when they're gone. I'm too sensitive. I need to be slightly numb in order to regain the enthusiasms I once had as a child.

On our last 3 tours, I've had a much better appreciation for all the people I've known personally, and as fans of our music, but I still can't get over the frustration, the guilt and empathy I have for everyone. There's good in all of us and I think I simply love people too much, so much that it makes me feel too sad. The sad little, sensitive, unappreciative, Pisces, Jesus man. Why don't you just enjoy it? I don't know!

I have a goddess of a wife who sweats ambition and empathy and a daughter who reminds me too much of what I used to be, full of love and joy, kissing every person she meets because everyone is good and will do her no harm. And that terrifies me to the point to where I can barely function. I can't stand the thought of Frances becoming the miserable, self-destructive, death rocker that I've become.

I have it good, very good, and I'm grateful, but since the age of seven, I've become hateful towards all humans in general. Only because it seems so easy for people to get along that have empathy. Only because I love and feel sorry for people too much, I guess.

Thank you all from the pit of my burning, nauseous stomach for your letters and concern during the past years. I'm too much of an erratic, moody baby! I don't have the passion anymore, and so remember, it's better to burn out than to fade away.

Peace, love, empathy,

Kurt Cobain

Frances and Courtney, I'll be at your altar.

Please keep going Courtney, for Frances.

For her life, which will be so much happier without me.

[NB[1] Boddah, was according to Cobain's mother his imaginary childhood friend. An alternative explanation is that the

'o' is in fact a 'u', and the word is meant to say Buddha]

7.7 Cyber Suicide Contagion: an Empirical investigation

The publication of the suicide note and Love's eulogy provided an opportunity to use the framing approach discussed above to investigate the empirical plausibility of the socio-cognitive model of media suicide contagion developed here. Specifically, perceptions of one's own suicidality could be compared following exposure to either Love's eulogy; effectively a negatively framed version of Cobain's suicide note, or Cobain's note that provided a more positive representation of suicide. These could be compared to perceptions following exposure to a third version of the note, artificially framed with negative meanings of suicide from the social mindscape of suicide.

7.7.1 Research Objectives

To assess the empirical plausibility of the idea that media exposure to negatively framed suicide representations over the Internet can influence people's perceptions of their own suicidality.

Specifically, the research hypotheses were that:

- · media exposure to Cobain's suicide note will be followed by an overall increased level of perception of oneself as potentially suicidal

- · media exposure to Love's negatively annotated version of Cobain's suicide note will be followed by an overall reduced level of perceiving situations and oneself as suicidal

· media exposure to a negatively framed version of Cobain's suicide note using negative meanings of suicide captured in the social mindscape of suicide will be followed by an reduced level of perceiving situations and oneself as suicidal

7.7.2 Materials and Method

A frames page was initially published to the web in May 1999 using Microsoft FrontPage with an address registered specifically for the research of http://www.cobainsuicidenote.net and was submitted for indexing by search engines, directories, and sites already providing links to Cobain's suicide note. In this way, people searching for the suicide note could access the page via third party hyperlinks. The suicide notes were not published at the site; rather the site simply directed interested parties to the suicide notes, whilst retaining a frame around the notes. Arriving at an initial home page, behind which lay this frames page, visitors to the site were asked, between November 1999 and the end of January 2000, if they would mind completing a very short anonymous questionnaire about how they personally felt about suicide, either before or after reading one of the notes. No incentives were offered and attention was called to the support group link on the background frame if they found either the note or questions in any way distressing. Also, site visitors were told that they could change their mind about answering questions, and withdraw from the study at any time. Visitors not wishing to participate could click on a hyperlink to directly go to the Love annotated version of the note, not via a frames page.

Visitors indicating that they would be prepared to participate were randomly assigned to one of four groups, each sent to a different version of the suicide note/questionnaire when they clicked on a hyperlink button:

- Group 0 - control group to answer questionnaire before seeing suicide representation

- Group 1 – who see a transcript of the original Cobain note (in an otherwise blank frames page from http://www.nirvanaclub.com/facts/note.htm)

- Group 2 – who see a transcript of the suicide note negatively annotated by Love (in an otherwise frames page from http://www.nirvanaclub.com/facts/clnote.htm)

- Group 3 – who see a transcript of the original Cobain note, in a frames page, framed in terms of dominant negative associations around suicide: pain, selfish, cowardly, anguish, suffering

The questionnaire, in keeping with successful protocol for web research, was brief and simple, asking age, sex, nationality, and then the two questions Range and her colleagues had used in their research into suicide contagion. Specifically, participants were asked a projective question (if you had been Cobain, do you think you would have committed suicide?) and a predictive question about suicide (how likely on a scale of one to seven of increasing likelihood do you think you will one day attempt suicide?) (see Figures 27 and 28 below). This use of Range's short and succinct questionnaire was chosen only after the publication of a longer prototype pilot questionnaire that had also

sought to capture additional variables had resulted in *no* completed questionnaires after one month. The responses were captured in a simple CSV (comma separated variable) database sent from the HTML form.

7.7.3 Participants and Recruitment

Participants were not actively recruited but were Net-users seeking to read Cobain's suicide note over the Net, invited to participate in the research. 61 people completed the questionnaire in the three months from November 1999 to the beginning of January 2000, 53 of whom were from the US, 5 from the UK, 2 from Australia, and 1 from France. 47 were male and 14 female, and age ranged from 13 to 38 (mean 18.7 standard deviation 4.9).

7.7.4 Results

Although the results showed only a very weak tendency, they were in line with expectations. Specifically, participants having seen the Cobain suicide note did tend to see themselves as more likely to commit suicide had they been in Cobain's position (projection), and they were more likely to think their own suicide was more likely than those who had not seen Cobain's note (expectation). On the other hand, exposure to either of the negatively framed versions of the note by Love or based on the social mindscapes of suicide was followed by responses that overall indicated higher levels of suicidality than for the control group, although these were lower than for the unframed Cobain note. In this sense, the results ran contrary to expectations insofar as negative suicide representations were followed by interpretations of one's own suicide potential that were not lower than for those not exposed to suicide representations.

Overall, it should be stressed that the variation in responses between texts was small indicating that any influence of the exposure to the texts was not likely to have been anything more than very slight. The only difference found using inferential statistics indicating an association strong enough to possibly allow for probabilistic inferences to be made outside the researched group was between the Cobain note and the control case for projected suicide. Here, a simple contrast revealed, overall, a statistically significant difference in projected suicide in Cobain's position between the control group and the Cobain group, the contrast estimate = .71, $p < .01$ ($p = .003$). There was almost a significant difference between the control group and the Love text group with a contrast coefficient of .44, $p = .061$. In terms of expectations of one's own likelihood of committing suicide, neither chi-square nor Mann-Whitney U tests found any indication that the any patterns in the data might be generalisable. Nevertheless, the findings were compatible with the expectation that exposure to the positively framed Cobain suicide note might influence perceptions of one's own suicidality such that suicide is perceived as more likely.

Figure 27: Cyber Suicide Contagion: Projection Results

Mediate Suicide Contagion: Projection
'If you were in Cobain's situation would you have committed suicide?'
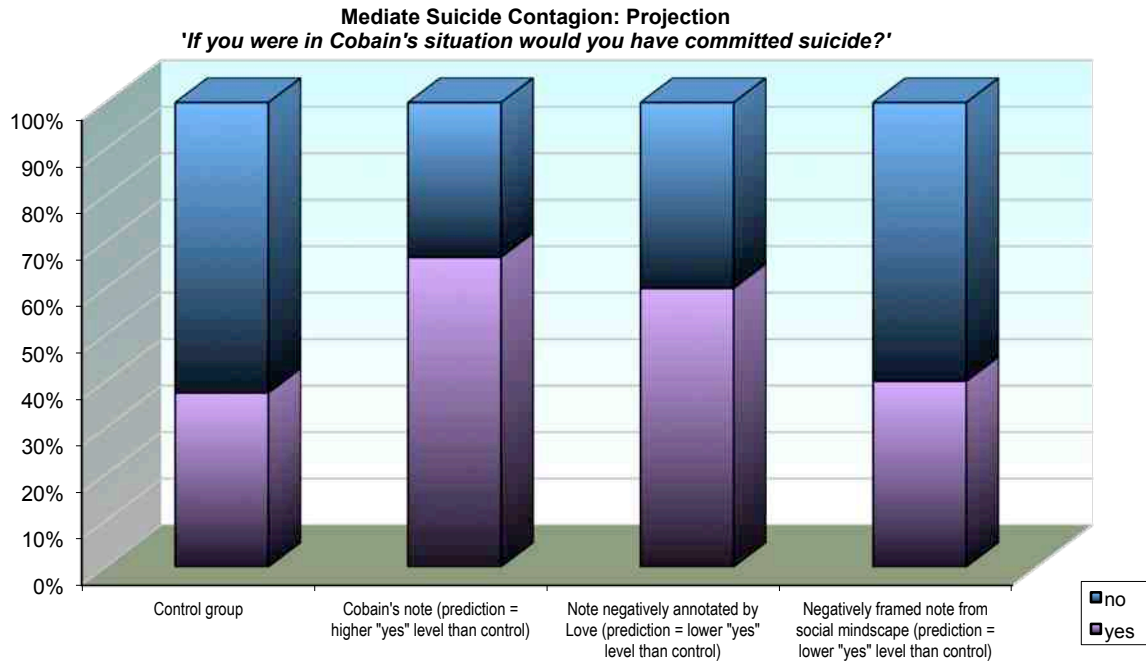
Figure 28: Cyber Suicide Contagion: Expectation Results

Mediate Suicide Contagion: Expectation
'How likely to you think it is that one day you will commit suicide?'
(scale =1 (not at all likely) - 7 (very likely indeed))
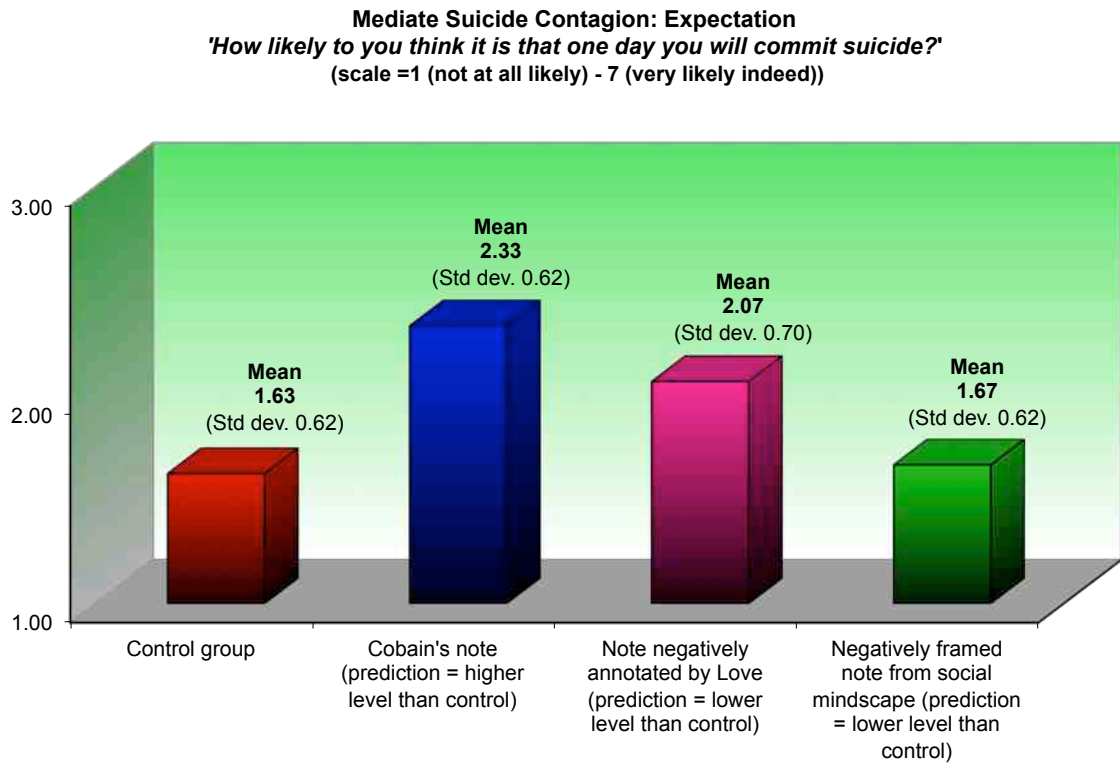
7.7.5 Discussion

The results are consistent with the idea that people may use media representations to a limited and slight extent in order to interpret situations and themselves as suicidal. That any association is not stronger is not surprising given that the model specifies that any influence would be largely contingent on some antecedent internal conflict around suicide. It is quite possible that many of those accessing the note were doing so out of a detached interest – academic or otherwise, and in which case, no influence on perceptions would be expected. Because of the limitations in recruitment, asking only potentially suicidal people to participate in the study would not have been possible. The failure of inferential statistical tests to indicate with a high level of probability that the findings might be representative of a broader population of Net users interested in Cobain's suicide note is certainly in part due to the relatively low number of participants. The original plan had been to collect data over a two-week period as for the previous studies, but six times this was needed to capture anything like the level of responses generated from viral recruitment. Again, given that ethical constraints precluded pro-active recruitment, the research was entirely dependent on people looking to access the note. The problem was exacerbated by the wide propagation of the note over the Net, which meant that the framed web page was only one among many portals for accessing the note.

Despite the relatively low participation levels, it is important to emphasise that the results *were* consistent with the model of media suicide contagion developed here. Specifically, exposure to negative suicide representations

framed by either Love or the social mindscapes were followed by lower projected and expected levels of suicide than following exposure to the Cobain note. However, exposure to all versions of the note resulted in higher levels of projected and expected suicide than the control case, and this runs contrary to the expectation that negatively primed meanings of suicide provide material for a more negative interpretation of suicide. One way of interpreting this result within the socio-cognitive model developed here is that the negative framing of the note failed to eradicate all of any pro-contagion influence of priming and modelling following exposure to Cobain's note.   This interpretation is consistent with the finding that overall levels of perceived suicidality were highest following exposure to the Cobain note. In sum, the findings of this study provide some support for socio-cognitive model developed here to account for the possibility of media suicide contagion.

Even though both the theory and the findings of the study would suggest that any influence of web representations of suicide on suicidality is likely to be slight, given the ubiquity of suicide representations available over the Internet any finding consistent with any influence may be significant. Google.com, which is one of the largest site indexing services covering about 20% of the Internet, currently lists 104 993 web pages relating to suicide (October 1999). To put this in perspective, for every ten mentions of the word 'love' on the web, there is one mention of 'suicide'. It should be stressed that the nature of these suicide web pages is diverse, ranging from the home pages of various pro-suicide groups offering advice and encouragement on how to commit suicide such as the Church of Euthanasia at www.enviroweb.org/coe, to

pages dedicated to publishing suicide notes and suicide methods, or to celebrity suicides fatalities, to the sites of numerous organisations and help services for suicidal individuals such as www.samaritans.org. These are sites complemented by online interactive self-help newsgroups for suicidal people, suicide-related chat rooms and suicide bulletin boards for exchanging ideas on suicide (Thompson 1999). Given the ubiquity and availability of suicide representations over the Net to which access is becoming increasing generalised, and given potentially fragile intrapyschic states of some suicidal people, even a slight influence of these representations on perceptions of the appropriateness of suicide among suicidal people could have significant implications for some individuals.

Of course, the relationship between the Internet and suicide is as controversial as in any other information medium. Simply because suicide representations are freely available and widely indexed over the Internet does not mean they are seen. Indeed, there are very few case studies that have been reported suggestive that suicidal individuals might use suicide representations available over the Web to inform aspects of their own suicidality. One such study, focusing on the 'Church of Euthanasia' found that suicidal individuals appeared to be posting pre-suicide diaries up on the Church's bulletin board. In one case, advice was requested by a suicidal individual on how to commit suicide, who specifically asked where precisely to aim a pistol in the mouth for maximum effect. After receiving advice and following messages of encouragement and support from other Internet users, the individual killed himself with a firearm (Baume, Cantor and Rolfe 1997). The researchers also

identified a similar posting communicating suicide intent asking for advice on self-poisoning which again resulted in encouragement, followed by a death by self-poisoning. Similarly, another study found that a woman had attempted suicide according to an unusual and particular 'suicide recipe' available over the Internet (Haut and Morrison 1998). Of course, any influence of these suicide representations available over the Net on these suicides may have been direct and qualitative, and therefore not indicative media suicide contagion, but nevertheless it would seem at the very least that the Internet, by making the means of suicide freely available to at-risk individuals, might have some facilitative role in suicide. However, it is important to balance any possible pro-suicidal influence of the Internet with the possibility of in influence in the opposite direction. For example, the whereabouts of a woman who had posted a suicide note over the Net just before attempting suicide was identified by a computer hacker, and as a consequence police were able to break into her home and take her to hospital (Suresh and Lynch 1998). Despite the non-trivial implications for civil liberties and privacy, here was a case of one suicide attempt that did not result in a fatality that probably *would* have occurred had the information not been posted over the Net. More generally, the activity of the many online support groups providing help and advice about alternatives to suicide for suicidal individuals may have an influence such that suicide becomes less likely (cf. Miller and Gergen 1998).

8.0 Conclusion

Can a model of media suicide contagion be useful in interpreting suicide? The answer to this question as interpreted here is, on balance, a modest, cautious and probabilistic 'yes'. This is in spite of an initial assessment of the empirical plausibility of media contagion based exclusively on empirical findings as uncompelling. Specifically, retro-directed reports attributing a contagion cause to an observed suicide effect were considered problematic, given the logical ambiguity of ex-post facto inference. Likewise, the positivistic and behaviourist research approach adopted by some sociologists such as Phillips and Stack, using statistical associations between official suicide rates and the dates of certain suicide publicity to infer contagion, were seen as failing to be compelling even when viewed in their own positivistic terms. This interpretation was reached principally because there is little in the evidence provided by these studies that could unambiguously link particular suicides to cases of exposure to suicide representations. It was suggested that the problem of interpreting any meaning from the weak correlations that have sometimes been identified in these studies has been exacerbated by the fact that research has proceeded in a theoretical vacuum, with no framework to guide exploration or inform the interpretation of results. So it is despite these misgivings about previous research that the conclusion of this project is that it may indeed be plausible to understand media representations as possibly influencing suicidality.

This conclusion was reached by following a somewhat different path to earlier research. Specifically, this project *first* developed a theoretical model of media

suicide contagion that was *then* used to guide and interpret empirical research designed to assess the empirical plausibility of the developed model. Using the theoretical mechanisms of priming and modelling, logical arguments for media suicide contagion were developed, and then empirical illustrations of how the theoretical mechanisms underpinning the model might operate were provided. The socio-cognitive model proposed here suggests the possibility of media suicide contagion may be understood in terms of how positively framed media representations may evoke a non-random subset of possible meaningful associations around suicide, thus increasing the salience of those meanings in the minds of those exposed to them. For the vast majority of people not caught in any unresolved dilemma over whether to act suicidally, this priming may have no effect on decisions, but for any such conflicted individuals the primed meanings may colour suicidal thought and perceptions, thereby possibly influencing a suicide decision. Any influence of this relatively automatic priming may then be compounded by a possible deliberate use of the media representation to update internal models of the meaningful consequences of suicide if those representations are perceived as more positive than anticipated, thereby potentially and indirectly informing suicide decisions. In short, the idea developed here was that through a nested hierarchy of influence consisting of priming and modelling, exposure to positively framed media representations perceived as meaningful could, in some distressed individuals in situations experienced as potentially suicidal, modify interpretations of the meaning of suicide and the situation and thereby inform suicide decisions.

In assessing the plausibility of this model, it was shown that exposure to media representations may indeed appear to prime and colour interpretations of situations, particularly if they are ambiguous, and require a response. Media exposure to the concept of suicide over the Internet prior to interpreting a potentially suicidal situation did appear to influence the degree to which that situation is perceived as suicidal. Similarly, the idea that people may use vicarious experience gathered over the media to update and inform internal models that are the subject of current deliberation was found to be an empirically plausible model. Finally, perceptions of people's own suicidal potential did seem to be influenced by exposure to media suicide representations, at least over the Net.

It is important to interpret both the socio-cognitive model and empirical findings produced here within the context of the limitations and shortcomings of the research. In terms of limitations at the most general level, it is perhaps important to note from within the relevance structure, that is, the interpretive framework, of the model developed here, that the model itself would be at odds with its own assumptions if it were to see itself as a 'true' reflection of some immutable reality. Rather, if perceptions and though processes are constructed out of shared meanings and ways of thinking that are transient and flexible, then a socio-cognitive model of media suicide contagion can see itself only as but one interpretation among many that have relevance and plausibility only within a particular social scientific relevance structure. In other words, the heuristic value of theoretical models such as the one developed here may be seen as relative and contingent on the

interpretive framework from which it is constructed. From this perspective, the purpose of this research project may be seen as not so much as having provided an assessment of whether media suicide contagion does occur, but rather more modestly an assessment whether it might be plausible to use such a heuristic in interpreting how people might inform suicide decisions within a particular relevance structure. Essentially, the position adopted here is similar to that of Peter Berger's (Berger 1963, 1986, with Luckmann 1966, with Kellner 1981) vision of 'interpretive sociology' that draws its central insights from the work of Weber and Schutz (Weber (1946, 1949, Schutz 1967). Consolidated into a sociological 'way of seeing' based on the Weberian insight that

> *'The objective validity of all empirical knowledge rests exclusively upon the ordering of the given reality according to categories which are subjective' (Weber 1949: 110)*

Berger has suggested that a role of sociology is to generate meaningful second order interpretations of how people interpret their experiences and make sense of the world. Rather than reduce explanation to prediction, and people to eviscerated ciphers, a goal of this interpretive sociology is to provide an interpretation how people might interact with their environment to construct, derive and maintain meaningful realities through processes of interpretation that are diverse and variable. The socio-cognitive model developed here may be interpreted as a contribution to this project.

It is of note that the socio-cognitive model developed here and informed by such an interpretive stance may well appear weak and unsatisfactory from a behaviourist perspective. In particular, the empirical research focus on

ideational rather than behavioural manifestations of suicide may well appear uncompelling since it is quite possible that any apparent influence of suicide representations on meanings and motivations around suicide may have no bearing on whether suicide representations elicit behavioural responses continuous with suicide. From a behaviourist perspective, this may well be the case but from the Weberian humanistic conception of people as '…cultural beings, endowed with the capacity and the will to take a deliberate attitude towards the world and to lend it significance' (Weber 1949: 81), the behaviourist perspective is blind to the essential feature of suicide as deliberate and meaningful action.

At a more practical level, and in terms of limitations of this project, it is important to note that the primary research was conducted exclusively over the Internet, and that any external validity gained by conducting research in the field will have been compromised by a loss of internal validity by not controlling the environment in which the research was conducted. Further, any relevance of the empirical findings of this research may not extend beyond this new medium and its users. Recruitment over the Internet was, as a matter of necessity, non-probabilistic, which means that the statistical tests used should be interpreted merely as having heuristic value, rather than some absolute positivistic significance. Additionally, sample sizes for the Cobain research were inadequate to make full use of data collected around suicide projections, despite a period of three months fieldwork. In retrospect, a less ambitious final study that compared only one experimental group with a control group might have provided clearer patterns in the data. On the other

hand, had this been done, the interesting result that negatively framed media suicide representations might appear to reduce any risk of contagion would not have been found.

Bearing limitations and shortcomings of the research in mind, any inferences from the model and the data pertaining to the empirical plausibility of media suicide contagion, must be modest, cautious and probabilistic. What the findings most emphatically do not suggest is that suicide is contagious in any mechanistic determinative sense; rather the findings should be interpreted cautiously in the context of existing priming and modelling research that suggests that some people may *use* media representations to derive meaning from situations, and thereby inform their goals and actions. When interpreted in this way, the balance of evidence and argument relating to the plausibility of suicide contagion may tip cautiously in favour of the putative phenomenon. In short, it is the finding of this project that it does make some theoretical and empirical sense to understand media representations of suicide as influencing the suicidality of some conflicted people experiencing what they perceive as potentially suicidal situations. Media representations of suicide may plausibly be used in such circumstances to confirm and reinforce the meaningful definition of an existing situation as suicidal. For those wishing for a simple mechanistic and determinative model of suicide contagion, then this conclusion may well appear weak and unsatisfactory, but there is no compelling evidence to suggest the operation of any such model.

In terms of directions for future research into media influence, it would perhaps be interesting to explore how the online grounded research tool developed

here to generate a social mindscape describing the shared meanings of suicide could be used to differentially frame suicide stories for different groups. For instance, research could generate a social mindscape of suicide from the participation of people known to be suicidal, and could be compared to a mindscape generated by non-suicidal people. As well as providing insight into the different shared meanings of suicide for these two groups, such research could be used to identify words that may perhaps prime pro-suicidal thoughts in those particularly at risk from suicide. Other possible directions for future research building on the model developed here might seek to further unpack the concept of modelling-induced contagion, identifying for example how identification, model status and perceptions of observed consequences might differentially impact on modelling, not merely in behavioural terms, but also in terms of meaning and motivation.

With respect to possible implications for public policy, as an exercise in interpretive sociology, this project remains neutral. As an interpretive sociologist, I subscribe fully to Berger's vocational mandate that we are at odds with our own enterprise if we wish to play the role of advocates for this or that application of research (Berger 1963, 1986, Berger and Kellner 1981). All application is value-based and requires value-judgements to be made and from an interpretivist stance this is problematic. The central problem here is that normative values are seen as existing within only within finite and relative interpretive frameworks. As Blaise Pascal famously noted, what is truth on one side of the Pyrenees is false on the other. Weber captured the position of the interpretive sociologist with regard to applying the findings of investigation:

> *To apply the results of this [sociological] analysis in the making of a decision, however, is not a task which science can undertake; it is rather the task of the acting, willing person: he weighs and chooses from among the values involved according to his own conscience and his personal view of the world. The act of choice itself is his own responsibility (Weber 1949: 53).*

However, one of the advantages of adopting an interpretive stance such as this in sociology is the recognition that sociology is just one relevance structure among many, and by moving out of it and into my own personal relevance structure, I can make my own recommendations not *qua* sociologist, but concerned, and hopefully informed citizen. This is what I will briefly do.

The political issues raised by the ideas of media suicide contagion stretch far beyond the worrying possibility that the media might be facilitating the pain, suffering and even death of distressed and unstable individuals. If media representations of suicide are used by some people to inform perceptions and intentions around suicide, then the question is raised of whether the current voluntary guidelines on broadcasting suicide stories should be encoded into enforceable law. And what of the contentious issue of Internet censorship, even if debate is somewhat academic given that the distributed nature of network practically precludes effective such censorship?

The selective interpretation of any research report can usually be used to serve conflicting pragmatic projects. For a pro-censorship lobby wishing to curtail press freedoms, the cautious and rather modest findings of this research could be used to support their fear that the media has a malevolent influence on a distressed and susceptible audience. On the other hand, the results of the critical review of research into the media suicide contagion could

be used by those seeking to debunk the hyperbole surrounding media influence*, it is simply is not the case that there exists a significant body of compelling research supportive of the idea that exposure to media representations of suicide can influence people's suicidality*. My own reading of the implications of the research conducted and reviewed here is that there may indeed be a risk of media suicide contagion, but that to make any move with the coercive force of law to reduce this risk would be to open a Pandora's Box. If media representations of suicide were prohibited, based on the eminently fallible research and cautious interpretation provided here, then what other 'undesirable' influences will be cleansed next? Importing what I consider to be the most precious gift of the sociological way of seeing into my own personal relevance structure: a modesty borne of an attentiveness to the force of unintended consequences, I think that like information in a gene pool, a pool of cultural information thrives on diversity and suffers with selective removal of undesirable elements. The potential for unforeseen nefarious consequences of ideational eugenics in media censorship outweighs any argument or evidence for legislation curtailing the informed publication of suicide representations.

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Paul Marsden

July 2000

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Postscript: Mileage from the Meme Metaphor

Although this project has used the conceptual tool of memes in the development of a theory of media suicide contagion, no attempt has been made to explicate the various internal debates and controversies that permeate the emerging enterprise of memetics. For example, no mention was made of the current dispute as to whether a meme should be conceptualised, as it has been here, in terms of knowledge, that is, a unit of memory, or whether a meme represents an objectification of that knowledge as an act or product of that act. An alternative behaviourist understanding of a meme to that developed here would be to restrict the term to describe only those new motor patterns executed through observational learning. Similarly, the general discussion as to just how deep the analogy may run between the dynamics of information transmission in a cultural substrate, and that in a genetic substrate has not been developed. I have commented upon and sought to address these controversies elsewhere (Marsden 1998, 1998a, 1998b, 1998c, 1999a, 1999b).

The reason for not tackling these debates over definition and appropriateness of metaphor in memetics in the context of this project was simple. Such internal wranglings of the nascent enterprise were not pertinent to the explicit goal of this project, which was to assess the empirical and theoretical plausibility of the putative phenomenon of media suicide contagion. The idea of a meme was introduced here as a potentially useful conceptual tool to denote, consistent with the meaning originally endowed by Dawkins, a

selected unit of memory, described here in the context of a socio-cognitive selectionist model of priming and modelling as a semantic node in an associative network. Whilst the term 'semantic node' might have sufficed, the selectionism implicit in Berkowitz's neo-associationism that formed the foundation of the model developed here meant that the term meme was appropriate. However, the decision to operationalise the concept of a meme in this way should in no way be seen as precluding the possibility of using alternative conceptions of the term – of which there are many, or indeed as invalidating alternative memetic projects.

A large proportion of the definitional controversy in memetics derives from a debate over the possibility of an empirical social science of 'population memetics', a project that would seek to track changes in frequencies of cultural items over time. For such an enterprise to be viable, it has been argued that memes must be directly observable and measurable, and that therefore they should be conceptualised as objectified acts, such as behaviour or perhaps the products of behaviour. The point to be made here is that even if one accepts this argument, this macro-memetic project does not preclude the possibility of a micro-memetic perspective such as that advanced here, which has more in common with Dennett's Darwinian theory of consciousness and the associated idea of neural Darwinism. If deemed useful, such a micro-memetic perspective focusing on a selectionist model of mind and agency emerging though constellations of 'genes of meaning' might come to be seen as simply another complementary branch of memetics. Just as molecular and evolutionary (population) genetics are discrete branches in the field of

genetics – indeed an evolutionary gene is something very different to a molecular gene – the micro-memetic perspective proposed here might usefully co-exist with any macro-memetics. What both projects would share is a selectionist focus on the dynamics of cultural information that involves an explicit eschewal of the genetic fallacy. Indeed, together the two approaches might provide the basis for the idea suggested in Section 4.1 that one general way to understand the persistence of culturally specified maladaptive action over many cultural generations might be to use a heuristic of inclusive memetic fitness contribution. From this perspective, human action that is detrimental to the individual may be interpreted, and made sense of, in terms of the overall impact of that action in getting reproduced. As long as the overall reproductive chances are not consistently reduced, then from a memetic perspective, it makes sense that such traits should persist in a cultural or meme pool over time. Of course, such an interpretative heuristic of inclusive memetic fitness contribution is not intended as functionalist explanation providing a rationale 'for' doing something, such as a reason for sacrificing oneself for the good of one's country, but rather, how a cultural variant – whatever its origin – that specifies such a course of action may persist over generations of cultural time in a group. As long as the culturally specified act has no nefarious consequences on its own ability to be reproduced, then, from a memetic perspective, the persistence of that trait over time makes good selectionist sense. In selectionist explanation there are no reasons 'for' doing something, there are simply reasons for why those things may remain candidates for selection, that is, how their transmission

may be tolerated over generations, whatever rationale might have existed for their origination. Just as sociobiologists may have provided limited and controversial insight into the persistence of genetically enabled maladaptive traits, including suicide, in a gene pool over time using a rationale of inclusive genetic fitness enhancement, without ever having physically identified suicide or maladaptive genes, the analogous interpretative heuristic proposed here may perhaps come to be useful in memetics.

From the perspective of the emerging field of memetics, perhaps the best way to interpret this project is therefore in terms of an attempt to demonstrate the potential mileage that might be made from applying the meme metaphor in order to generate insight into existing problems within social science, even in these early days of the enterprise. Rather than seek to chase an partial analogy to its limits in the construction of a new theoretical model that is isolated and dislocated from the questions and concerns of social science, an alternative strategy pursued here is to forge memetics on the back of problems for which alternative approaches may provide less than satisfactory insight. The conviction here is that it is by applying the idea of memes to existing problems, drawing where appropriate from the insights of over a century of established social contagion and evolutionary culture theory, and demonstrating the utility of the emerging enterprise 'in the field' that strategic direction to current debates in memetics will be found, helping our emerging discipline to remain progressive.

Appendix: Software Code for the Social Mindscape Generator and Online Stimulus Material