A Three-Factor Causal Model of Depression

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This chapter outlines and etiological model of clinical depression developed by my colleagues and myself (for a full account, see Brown & Harris, 1978).

I *am* convinced that depression is largely a social phenomenon and the three main components of the model are all social—or it might be better to say psychosocial. By this I mean two tings. First, the clinical depression is a cognitive phenomenon, stemming from ideas about the world—past, present and future. Second, I can conceive of societies in which clinical depression is rare. Here, I will add a rider: I have no wish to assert that genetic, constitutional and physical factors are never involved in etiology.

Existing evidence for their importance remains indirect and unimpressive: if such factors can in the future be shown to play a role they can easily be incorporated into the model. The ideas developed slowly over the last 9 to 10 years. Nonetheless, model and theory probably do not diverge much from ideas expressed elsewhere. Any claim to originality probably rests on the manner in which the three factors have been brought together in a causal model and its use to explain social class differences in the prevalence of depression. It may be of some interest to outline the main stages of the model's construction.

The research involved the study of six groups of depressed women, all aged between 18 and 65 years. Two were treated by psychiatrists, a group of inpatients and a group of outpatients, and another by general practitioners. All three lived in Camberwell in South London, a part of the Inner

London borough of Southwark. There is a sizable middle-class population, but the majority are working class and the district has many of the problems of inner city populations, such as declining employment opportunities in industry. The final three groups were obtained by selecting women at random from nonpatient populations and establishing whether or not they were depressed. The first two surveys also involved women in Camberwell: in 1969 and 1974 we collected, among other things detailed information based on a clinical-type interview about the psychiatric state of 458 women. Recently, similar information has been obtained for 354 women living in the Outer Hebrides.

The six groups of depressed women, although different in origin, have given essentially similar results. For example, like Paykel and his colleagues, we found little or no evidence of an

endogenous depressive group; all the forms of depression we studied appear to be equally influenced by social factors (Brown & Harris, 1978, Chap. 14). What differences have occurred may prove to be explicable variations of the same basic etiological process. This chapter therefore holds for all types of depression, excluding only conditions involving definite manic features, which were not studied.

At the center of the model is a particular type of life event. Given our views on the cognitive basis of depression it was, of course, essential to deal with the meaning of life events and their immediate consequences. In current research, there is a good deal of uncertainty about what is important about life events in their role as etiological agents, although the majority of accounts appear to hold that meaning is in some way crucial. Given this, the most persistent

shortcoming has been to proceed as though an event such as ‘pregnancy’ can be interpreted or decoded in the way that an encyclopedia will tell us the meaning of a term. For some purposes—perhaps early in a research program—it may be useful to proceed as if this kind of decoding were possible: but fundamental progress surely can only come from recognizing that events in themselves do not have meaning. A pregnancy is never a pregnancy in the way it is described in an encyclopedia. It occurs to a woman with a past, present, and future and this context has in some way to be taken into account—the fact, for example, that her husband is in prison.

Our method for doing this is not uncomplicated, but it is, I believe, misrepresented when it is described in a recent commentary as requiring an acceptance of ‘a certain mystification of measurement’ (Dohrenwend & Dohrenwend,

1977). The method demands that the interviewer-investigator takes a dominant role in the measurement process and involves a lengthy training—and neither is fashionable. The debilitating grip of the standardized questionnaire on the social science research is still strong, although for the most part it is probably incapable of accurately measuring anything of complexity or emotional significance. It is in any case an approach that is only apparently 'objective'. A move from the rigidities of the questionnaire to an approach in which the investigator is trained to use rating scales, and to interview flexibly, gives back some hope of accurate and unbiased measurement (Brown, 1974). Once the need for lengthy developmental work and training is accepted there is no mystification. We have trained workers from all parts of the world in the use of our methods. It has so far required them to

visit us; but this is a common experience with new measures, not least in the natural sciences.

Our study established the date of onset of depression in the year before we saw the women and the exact date of events before this in the year. Our procedures, though relying on the skill of trained interviewers, are highly reliable. They also appear to be valid in the basic sense of considerable agreement about the occurrence of *particular* events when the accounts of respondents, seen by different interviewers, are compared. The procedures also avoid the potential bias present in instruments relying on the use of questionnaires (Brown, 1974). Events to be included in the study were defined in detail *before* we began. All were capable, in our judgement, of arousing significant positive or negative emotion. For instance, the admission of a husband or child to hospital was included only if it was an

emergency or the stay was seven days or more. On average such women in Camberwell had three such ‘events’ per year (Brown & Harris, 1978, Chap. 10).

On the basis of substantial background information about individual women, events are characterized in terms of two contextual scales: *short-term* threat, based on its likely threat the day it occurred, and *long-term* threat, based on the situation resulting from the event about one week after it occurred. The raters are allowed to take account of everything known about a particular woman except her psychiatric condition and how she reacted to the event. Both rate the degree of threat a woman would have been likely to feel given her particular biography and present situation. One of the most remarkable results of the entire program is that it is only the most threatening events on the *long-term* scale—what

we call *severe events*—that are capable of provoking onset of depression. They formed only 16 percent of the total 'events' occurring to women in Camberwell. Events severely threatening only in the *short-term* showed not the slightest association with onset however threatening they were on the day they occurred—for example, an emergency hospital admission of a child with an extremely high temperature.

The result is methodologically significant since it argues against measurement bias. It is difficult to see why such bias should be restricted to severe events alone; that is why it should not also have led to an association between depression and events severe only on *short-term* threat. The result is theoretically significant since the majority of the severe events turned out upon inspection to involve a loss, if this term is used with a certain license to include not only loss of a person but loss

of a role or loss of an idea. For example, a woman who had considered she was happily married and who found that her husband had had a love affair a year before would have experienced a severe loss event in the sense she had lost a conception of her husband and her marriage. This would be so even if the affair was over and the husband was not aware of her knowledge of the affair. Loss of an idea is probably a crucial component of most 'loss' events.

The threat ratings were only two of twenty-eight measures completed for each event and the degree of change in routine involved. But, as with the short-term threat scale, there was no suggestion that change as such or any other dimension had significance once the presence of a severe event had been taken into account.

Severe events were the major component of

the first factor in our model—the *provoking agents.* The results are, of course, comparable to those of Paykel and his colleagues in New Haven (Paykel, 1974). Using their concept of 'exit event,' the size of the effect is a good deal smaller than in the London study. But at the same time their categorization is a less sensitive indicator of *long-term threat,* that is, the type of event that appears to be critically involved in the etiology of depression. We do not include as a matter of course the 'exit' events of a child marrying or a son drafted as *severe* events, and Paykel apparently would not include as an 'exit' event a woman finding out about a husband's love affair—a severe event or us. Nonetheless the results are clearly convergent. There is, however, a second type of provoking agent. We also recorded ongoing difficulties such as poor housing which might or might not have been associated with an event. We

found that certain difficulties were capable of producing depression but not with the same frequency as severe events. Such difficulties were all markedly unpleasant, had lasted at least two years, and did not involve health problems.

When severe events and such major difficulties are considered together our search for provoking agents had been as successful as we could have reasonably hoped—a large proportion of all types of depression were preceded by one or other of the provoking agents. But just as a well-established carcinogen will not always lead to cancer, so a provoking agent does not always bring about depression. Indeed only a small minority of the women in Camberwell who experienced a provoking agent became depressed. In arithmetical terms two-thirds of women who developed depression had a provoking agent of causal importance in the year before onset. This is

probably a conservative estimate and takes account of the fact that some events and difficulties will be juxtaposed with onset by chance (Brown & Harris, 1978, p. 120; also see Chap. 9). However, in spite of the size of this association only 1 in 5 of women in Camberwell with a provoking agent developed clinical depression. Therefore while this factor determines *when* a woman develops depression, it does not tell us *who* will break down among those with a severe event or major difficulty. This is the function of the second factor of the model, which deals with the vulnerability.

Such vulnerability proved to be intimately related to social class. Fifteen percent of the women in Camberwell were suffering from a definite affective disorder in the three months before interview, almost all of depression. We have called such women *cases.* All had disorders of

a severity commonly met in a psychiatric out-patient department although few had seen a psychiatrist. Twenty-three percent of the working-class women were *cases* compared with only 6 percent of the middle-class women—a fourfold difference in prevalence.

Surprisingly, although severe events and major difficulties were more common among working-class women, this explained little of this difference in risk. If we consider only women with a severe event or major difficulty in the year before we saw them, thus controlling for class differences in the incidence of the provoking agents, there was still a large difference in risk. For example, 8 percent (3/36) of middle-class women with a child who had experienced a provoking agent developed depression compared with 31 percent (21/67) of working-class women— a fourfold difference in vulnerability. For those without a provoking agent

risk was only 1 percent in both groups (1/80) and (1/68), respectively.

What then is the reason for this remarkable difference in vulnerability? Anything capable of increasing risk of depression should have been revealed by our lengthy search for provoking agents. We therefore felt reasonably sure that if there were factors that increased vulnerability, they would do so only when a woman also had a provoking agent. We therefore began looking among these women for the second factor of our model.

Lack of an intimate, confiding relationship with a husband or boyfriend acted in exactly the way we had predicted. For the women who had had a provoking agent and who were not already depressed lack of such a tie greatly increased risk. Further, as predicted, for those without a

provoking agent lack of intimacy was not associated with an increased risk of depression. (Table 1.)

Table 1. Percentage of women in Camberwell who experienced onset of depression in year by whether they had a severe event or major difficulty and intimacy context

	Intimate relationship		
Event	*Yes, with husband or boyfriend %*	*Yes, with someone seen regularly other than husband or boyfriend %*	*No %*
Severe event or major difficulty	10 (9/88)	26 (12/47)	41 (12/29)
No severe event or major difficulty	1 (2/193)	3 (1/39)	4 (1/23)

'Intimacy' unfortunately is a 'soft' measure, at least in a cross-sectional survey, and we cannot altogether rule out the possibility of bias. We therefore looked for 'harder' indicators of vulnerability. We found three which, when considered together, gave much the same result as

intimacy. They are having 3 or more children under 14 living at home, lacking employment away from home, and loss of a mother before the age of 11. The four vulnerability factors provide much of the reason why particular women get depressed following a provoking agent. They also provide most of the reason for the increased risk of working-class women. Such women are at greater risk largely because they more often have one or more of them.

Table 2 summarizes these results. Groups A and C in the table provide the extremes of protection and vulnerability for those with a provoking agent. Everyone with a confiding relationship with a husband or boyfriend is placed in group A and such a relationship is associated with a neutralizing of the effect of the three other factors. For women in group A not going out to work, for example, does not increase risk. Group B

contains those without such a relationship but not a loss of mother before age 11 or 3 or more children under 14 at home, and C the remaining women. Compared with A, risk is increased in B and still more in C. It is only in groups B and C that work outside the home serves a protective function. In both groups it almost halves the risk of depression in the presence of a severe event or major difficulty. Finally, for women without such an event or difficulty groups A, B, and C are unrelated to risk of depression.

*Table 2. Proportion of women in Camberwell in whom depression developed in the year among women who experienced a severe event or major difficulty by vulnerability factors**

		With event or difficulty		*Without event or difficulty*	
Event	*Status*	*%*	*%*	*%*	*%*
A. Intimate tie with husband or boyfriend regardless	Employed	9 (4/43)	10 (9/88)	1 (1/117)	1 (2/193)
	Not employed	11 (5/45)		1 (1/76)	
B. No intimate tie with husband or boyfriend, excluding early loss or 3+ children under 14 living at home	Employed	15 (6/39)		0 (0/34)	
	Not employed	30 (7/23)		11 (2/19)	
C. No intimate tie with husband or boyfriend *and* with early loss of mother	Employed	63 (5/8)		0 (0/7)	
	Not employed	100 (6/6)		0 (0/2)	

or 3+ children under 14 living at home		
Total	20 (33/164)	2 (4/255)

*Intimacy, employment status, early loss of mother, and 3 + children under 14 at home.

We found nothing else that helped to explain why women developed depression. But there remained yet a further question. Provoking agent and vulnerability factor were quite unrelated to the form or the severity taken by a depressive disorder. They in no way helped to explain why some women suffered from a 'psychotic' form and others a 'neurotic' form, and why within each some were more severely disturbed than others. We therefore looked for a third, *symptom-formation* factor. We have not only found such a factor but much the most important of its components involves social experience—the past loss of a parent or other close relative, usually in

childhood and adolescence (Brown, et al., 1977). Among psychiatric patients loss by death of such a relative is associated with psychotic-like depressive symptoms (and their severity). Figure 1 illustrates this by dividing a group of depressed psychiatric patients into an extreme psychotic, a less extreme psychotic, and a neurotic group. The associations are large, have been replicated, and are not explained by background factors such as age.

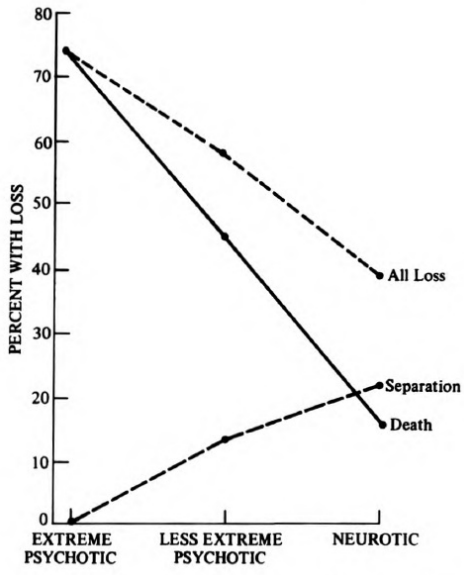

Figure 1. Percentage with past loss by death or separation among depressed patients by whether psychotic or neurotic.

It is important to note that loss of mother before 11 plays two roles—as a vulnerability factor it increases risk of depression, and as a symptom-formation factor it influences the form and the severity of depression according to whether the loss was by death or by separation.

This then is the outline of the model. Bearing various methodological innovations in mind, I believe a reasonable case has been made that the factors follow the temporal order specified and are involved in bringing about depression.

But what is going on? A causal model on its own, whatever its validity, is not enough. Consider employment. Is its protective role due to alleviation of boredom, greater variety of social contacts, or an enhanced sense of self-worth—or something else? The measures of a model do not have to be theoretically understandable in this sense—and at an early stage of development some at least will almost inevitably be theoretically ambiguous.

We have speculated that low self-esteem is the common feature behind all vulnerability factors and it is this that makes sense of our results. It is

not loss itself that is important but the capacity once an important loss has occurred for a woman to hope for better things. In response to a provoking agent relatively specific feelings of hopelessness are likely to occur: the person has usually lost an important source of value—something that may have been derived from a person, a role, or an idea. If this hopelessness develops into a *general* feeling of hopelessness it may form the central feature of the depressive disorder itself.

We have come to see clinical depression as an affliction of a person's sense of values which leads, in Aaron Beck's terms, to a condition in which there is no meaning in the world, that the future is hopeless and the self worthless (Beck, 1967). It is after such generalization of hopelessness that the well-known affective and somatic symptoms of depression develop. Essential in any such

generalization of hopelessness is a woman's ongoing self-esteem, her sense of her ability to control her world and her confidence that alternative sources of value will be at sometime available. If the woman's self-esteem is low before the onset of depression, she will be less likely to be able to see herself as emerging from her privation. And, of course, once depression has occurred feelings of confidence and self-worth can sink even lower.

It should not be overlooked that an appraisal of general hopelessness may be entirely realistic: the future for many women *is* bleak. It is probably here that our ideas depart most decisively from current opinion. We do not emphasize an inherent personality 'weakness.' While we do not rule out influence from the past—indeed we have demonstrated it has some importance—it is the link with the present that needs emphasis. Nor is it

adversity or unhappiness or even loss that are central. They doubtless will always be with us, the inevitable precursors or consequences of whatever happiness we manage to achieve. Clinical depression is much less inevitable. It is a question of resources that allow a person to seek alternative sources of value and that allow her to hope that they can be found.

This interpretation is clearly relevant to factors of the model involving the current situation. It seems possible that loss in childhood and adolescence can also work through cognitive factors. For instance, the effect of loss of mother before 11 may be linked to the development of a sense of mastery. The earlier a mother is lost the more impeded is the growth of mastery and this may well permanently lower a woman's feeling of control and self-esteem. But, of course, there are other possibilities. Early loss of a mother might,

for example, increase the chance of untoward experiences which are the direct antecedents of current vulnerability. Enduring feelings of insecurity may, for instance, increase the chance of marrying early an ‘unsuitable’ man.

For early loss acting as a symptom-formation factor we have suggested that women develop particular expectations about their environment as a result of past loss and these condition attitudes and behavior. Long-held perceptions of abandonment and helplessness may be linked to psychotic symptoms, and rejection and failure to neurotic symptoms.

For four years we have been developing new measures capable of exploring and testing these ideas, and we plan to use them in a prospective study. But we have also continued to use the existing material to explore the model. I have

stated that only *severe* life-events are capable of provoking depression—at least in the sense of producing a disorder that would not have occurred for a long period of time or not at all without the event. (Using our index of the 'brought forward time' we call this a formative causal influence in contrast to a triggering one (see Brown et al., 1973; and Brown & Harris, 1978, pp. 121-126). But events other than those rated as *severe* do play a lesser etiological role and the way they appear to do this fits our general view of depression as a cognitive disorder.

Women often endure major difficulty and disappointment for many years before developing depression. We therefore looked to see whether there was anything to suggest some kind of triggering effect about the time of onset of depression. We found, in fact, that these women do have an increased rate of quite minor events in

the 5 weeks before onset. If these events served to 'bring home' to a woman the full implications of her lot, the reason for breakdown at that particular point in time would to some extent be explicable.

We see these minor events not as provoking agents in the sense outlined, but they do appear capable of triggering a depressive disorder where there has been a major loss or disappointment. For example, one woman in Camberwell, who had a very difficult marriage and was living in poor and overcrowded conditions, developed depression four weeks after she learned of her sister's engagement to be married. The likely significance of the engagement needs no underlining. Quite trivial incidents may therefore in the context of an enduring disappointment produce feelings of profound hopelessness and swiftly the psychological and physical components

of clinical depression. Such a mechanism may also help to explain the existence of the minority of severe events that do not involve obvious loss. A number of concerned incidents such as hospital admission for a threatening physical illness. It was notable that a number of the women also had major domestic difficulties, and it is again easy to see how such a brief separation from them might have 'brought home' the full implications of their position.

It has been common to study the effect of 'stress' on illness in general. The research in London, which has also involved studies of schizophrenia, anxiety states, and various physical conditions, suggests that this is a mistake. There is now a fair amount of evidence that when the likely meaning of events is considered there is considerable specificity in the sense used by Paykel in this volume. This may hold even within

diagnostic groups. For example, a fifth of psychiatric patients with a severe event did not have one involving an obvious loss. Significantly more of these patients had a marked degree of anxiety associated with their depression (Brown & Harris, 1978, p. 228). The research indicates that specific types of experience should be related to particular psychiatric and physical consequences. While we argue that it is hopelessness that is critical in depression, usually provoked by some loss or disappointment, an important change in routine seems enough to bring about a florid relapse of schizophrenia symptoms (Brown & Birley, 1968). But it is not just a matter of different experiences leading to different conditions; it is possible that an experience protective for one condition may increase risk at the same time of another. A protective factor such as employment may help a woman to avoid depression because it

raises feelings of self-worth and mastery; it may, however, because of the 'stress' of doing two 'jobs' be associated with risk of other kinds of disorder.

Probably quite disparate disorders will ultimately be shown to relate to comparable psychosocial precursors, but this needs to be demonstrated and not assumed.

A final and obvious point. It is effective theory that is desired. Working-class women away from Camberwell may not always experience so many vulnerability factors, and these may in other settings have different implications. Therefore 'refutation' or 'support' of our results must take into account the link of the elements in the model with background factors such as class and also the fact that theoretical implications of the measures may vary with the social setting. We have begun comparative research in the Outer Hebrides with

the idea of forcing ourselves to face these kinds of possibilities. The population is largely rural and Gaelic-speaking. While the model has been supported to a surprising degree, there *are* some differences, and we trust these will lead to further development of measures, model, and theory. It is, I believe, from the struggle to resolve tensions between these three that new knowledge about etiology is likely to arise.

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REFERENCES

Beck, A. T. (1967): *Depression: Clinical, Experimental and Theoretical Aspects:* Staples Press, London.

Brown, G. W. (1974): Meaning, measurement and stress. In: *Stressfulness of Life Events: Their Nature and Effects,* edited by B. S. Dohrenwend and B. P. Dohrenwend, pp. 217-243. Wiley, London.

Brown, G. W., and Birley, J. L. T. (1968): Crises and life changes and the onset of schizophrenia. *J. Health Soc. Behav.,* 9:203-214:

Brown, G. W., and Harris, T. (1978): *Social Origins of Depression: A Study of Psychiatric Disorder in Women.* Tavistock, London.

Brown, G. W., Harris, T., and Copeland, J. R. (1977): Depression and loss. *Br. J. Psychiatry,* 130:1-18.

Brown, G. W., Harris, T. O., and Peto, J. (1973): Life events and psychiatric disorders. Part 2: Nature of causal link. *Psychol. Med.,* 3:159-176.

Dohrenwend, B. P., and Dohrenwend, B. S. (1977): The conceptualization and measurement of stressful life events: An overview of the issues. In: *The Origins and Course of Psychopathology,* edited by J. S. Strauss, H. M. Babigian, and M. Roff. Plenum Press, New York.

Paykel, E. S. (1974): Recent life events and clinical depression. In: *Life Stress and Illness,* edited by E. K. E. Gunderson and R. D. Rahe. Charles C Thomas, Springfield, Illinois.