

WELL-BEING AND ILL-BEING: DIFFERENT DIMENSIONS?*

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ABSTRACT. This paper presents evidence for regarding *well-being* and *ill-being* as distinct, although not orthogonal dimensions. It is suggested that well-being and ill-being may be like measures of quantitative and verbal ability in intelligence tests. For some purposes (e.g. for admitting students to particular courses of study) it may be sensible to use only one of the measures. For other purposes a combined measure – I.Q. – is appropriate. In this study we employ Indices of Well-Being and Ill-Being and a combined measure, Balance of Well-Being and Ill-Being.

Using data from the first wave (1981) of an Australian panel study ($N=942$), four measures of well-being and three measures of ill-being were factor analysed, confirming the existence of distinct dimensions. The value of the distinction was underlined by findings indicating that well-being and ill-being have different correlates and causes. Well-being depends more than ill-being on the personality traits of extraversion and optimism, and also on the existence of supportive social networks. Ill-being is more strongly related to SES, poor health and low scoring on the trait "personal competence". Overall, however, it was found that more variance can be accounted for in the Balance of Well-Being and Ill-Being Index than in the separate indices of Well-Being and Ill-Being.

Why do some people experience a greater sense of well-being than others? What are the causes of well-being and the causes of ill-being? This paper employs factor analysis and causal path analysis to explore links between people's sense of well-being or ill-being and their social backgrounds, personality characteristics, social networks and satisfaction with particular aspects of living.

We have some evidence, but not conclusive evidence, that the correlates and causes of well-being are somewhat different from the correlates and causes of ill-being. Our measures of well-being deal with satisfaction with life-as-a-whole, self-fulfillment, happiness and positive affects. Measures of ill-being deal with negative affects, worry and somatic complaints. Factor analysis of these two sets of measures suggests that they form distinct but not orthogonal dimensions. In the following pages we present all findings (a) as if well-being and ill-being are separate dimensions *and* (b) as if they could be combined into a single measure labelled "Balance of Well-Being and Ill-Being".

This mode of presentation may initially seem confusing but may perhaps

be clarified by an analogy with intelligence tests. General intelligence tests usually have separate sections dealing with quantitative ability and verbal ability, and results for the sections are often considered separately, for example in reviewing applicants for particular courses of study. However, it is generally found that, if an overall measure of intelligence is required, it is best to combine the two scores. In our study, well-being and ill-being are analogous to separate sections of an intelligence test, but we shall find that the combined Balance of Well-Being and Ill-Being Index appears to be the most sensitive measure of how people feel about the totality of their lives.

The distinction between well-being and ill-being derives in part from reviewing two bodies of research which have had little influence on each other: the social psychology literature on well-being or "quality of life", and the psychiatric epidemiology literature on neurosis and depression. Section I of this paper summarises the two literatures and indicates how we have attempted to integrate them in our own research. In Section II we describe the Australian panel study from which the data are drawn. We also review and examine relationships among dependent variables; measures of well-being and ill-being. Four sets of independent variables are included in the analysis: measures of people's social backgrounds, personality characteristics, social networks (both intimate relationships and more casual friendships) and satisfaction with particular life concerns. In Section III findings are presented. Here we distinguish between non-causal analysis — examination of correlations between independent and dependent variables — and preliminary causal analysis, for which we employ Alwin and Hauser's method of decomposing effects (Alwin and Hauser, 1975; Fox, 1980). Although emphasizing the exploratory nature of the latter part of the analysis, we thought it sensible to make our causal reasoning explicit, so that other researchers can comment and improve on the findings offered here.

The concluding section of the paper summarises apparent differences between the causes of well-being and the causes of ill-being, comments on public policy implications, and indicates how we intend to pursue causal analysis in panel research in Australia.

I. LITERATURE ON WELL-BEING AND ILL-BEING

A basic assumption underlying "quality of life" research is that human beings pursue or seek to experience a sense of well-being. Aspiration levels differ

(Michalos, 1980) but it is reasonable to assume that people want to experience mainly positive feelings, feelings of satisfaction, worth, self-fulfillment and happiness. Similarly they prefer to minimise feelings of dissatisfaction, futility, distress and anxiety. Quality of life researchers have been rather coy about stating these assumptions explicitly, perhaps because they might appear to imply that human beings are simply hedonists. No such implication follows, however. People's sense of well-being may be derived from many sources. It may come, for example, from personal or family relationships, or from doing one's religious duty, or from achieving material or career success, or from personal self-fulfillment arising from developing one's skills and abilities. We should explicitly recognise that people's life priorities and ways of pursuing well-being are diverse. In this context it is worth remembering that economists use the term "utility" and, if pressed, concede that this means well-being. They often write, however, as if utility were mainly derived from consumption of goods and services. It is essential to avoid this implication and to open to investigation the whole question of how people pursue well-being and why some do so more successfully than others.

There are several literatures on well-being and ill-being. Much writing is normative, some is empirical. Philosophers, religious writers, medical writers and pop psychologists adopt a normative approach. They advise us on how we ought to live, on what ought to be our sources of satisfaction, fulfillment and well-being, and on how to avoid pathologies and ill-being. Social scientists, by contrast, adopt an empirical approach. Their aim is to discover differences among people which explain why some experience a strong sense of well-being and others experience mainly negative feelings of ill-being. Within social science it is helpful to distinguish between (a) research on well-being and quality of life, undertaken mainly by social psychologists, and (b) research on neurosis, depression and ill-being, undertaken by psychiatric epidemiologists.

In Table I we have tried to summarise the methods, dependent variables (outcomes explained), independent variables (explanatory factors) and key findings from these researches. The aim is to compare findings, assess the extent to which they confirm, contradict or simply slide past each other, and to indicate what we hope to contribute through our Australian (Victorian) panel surveys.

Social psychologists, employing conventional survey methods, have focussed on the correlates and causes of well-being, largely ignoring indications of ill-being. They have attempted to account for levels of well-being mainly

TABLE I
Literature on well-being and ill-being

Academic discipline (representative authors)	Methods	Dependent variables (outcomes explained)	Independent variables (explanatory factors)	Key findings
Social psychology (Bradburn, 1969; Campbell <i>et al.</i> , 1976; Andrews and Whithey, 1976)	Surveys; mainly static analysis	Well-being/quality of life	Life concerns, demographic variables	Satisfaction with particular life concerns accounts for most (all?) valid variance in well- being; demographic variables account for little variance.
Psychiatric epidemiology (Srole, 1962; Dohren- wend and Dohrenwend, 1974; Henderson <i>et al.</i> , 1981; Veroff <i>et al.</i> , 1981)	Surveys; clinical interviews; mainly static analysis but some panel analysis	Neurosis, depression, ill-being	Personality traits, life events, social networks	Personality traits sub- stantially predispose to neurosis, depression, etc. Findings regarding life events and social networks are contra- dictory.

by examining satisfaction with particular life concerns (family life, jobs, leisure, etc.) and comparing different demographic or social groups. A major finding is that satisfaction with life concerns accounts for all or nearly all the valid variance in well-being (Andrews and Withey, 1976; Headey, 1981; Headey and Wearing, 1981). However, it would be incorrect to regard such relationships as causal. Life concerns are *part* of life-as-a-whole: satisfaction with the parts equals satisfaction with the sum of the parts. This was not a necessary or inevitable finding (relationships might not have been additive) but nor should it be treated as causal. A second, negative finding is that social background variables only account to a slight degree for levels of well-being. People of higher socioeconomic status experience only slightly greater well-being than people of lower status (Andrews and Inglehart, 1978). There are also few differences between men and women in terms of satisfaction and well-being, although home-makers, on average, seem somewhat less content than working women (Campbell *et al.*, 1976; Headey and Wearing, 1981). Differences by stage of family life cycle are significant but still not major. Parents with children at home tend to be rather less satisfied with many aspects of living than either young marrieds or people whose children have moved out to set up their own homes (Campbell *et al.*, 1976; Headey and Wearing, 1981; Sheehy, 1981). Elderly people tend to score high on relatively cognitive measures of well-being, but less high on relatively affective measures (Michalos, 1982).

We now review studies in the clumsily named field of psychiatric epidemiology. These focus on ill-being, on neurosis and depression rather than well-being. They involve surveys, and sometimes clinical interviews, which document the incidence of neurotic symptoms in population groups. From our standpoint the principal interest of these studies lies in their inclusion of a wider range of independent variables than in studies of well-being. Personality traits, evidence relating to personal life events (obtained from standardised life events inventories), and evidence about respondents' social networks (acquaintanceships, friendships and intimate relationships) as well as their social backgrounds have all been investigated in the search for explanations of ill-being. Risking over-simplification, one may summarise findings by saying that social background variables (especially SES and sex) and personality traits (including low self-esteem, introversion and neuroticism) are substantially correlated with ill-being (see, e.g., Pearlin, 1981; Henderson *et al.*, 1981). The impact of life events (Selye, 1956, 1971; Holmes and Rahe, 1967; Paykel

et al., 1971; Brown and Harris, 1978; Dohrenwend and Dohrenwend, 1978; Mueller *et al.*, 1979; Pearlin, 1981) and the significance of social networks (Cobb, 1976; Mueller, 1979; Lin *et al.*, 1979; Pearlin, 1981; Veroff *et al.*, 1981) are much less clear. One drawback has been that few researchers have sought to integrate variables into a plausible causal sequence and explicate their direct and indirect effects on neurosis and depression. An exception is a recent Australian study by Henderson *et al.* which finds that stress due to life events is strongly related to the onset of neurotic symptoms and that the presence of social networks has only a slight mediating effect in preventing symptoms (1981, Chapter 10).

Quality of life researchers and psychiatric epidemiologists appear to have largely ignored each other's contributions. They appear not to draw ideas, measures and methods from each other's work, and the findings they report seem neither mutually contradictory nor mutually confirmatory. Instead they slide past each other using different sets of independent variables, and dependent variables (measures of well-being and ill-being) which one would certainly expect to be somewhat correlated, but which it may or may not be sensible to treat as tapping a single dimension of "feelings about life".

In ignoring each other's work, quality of life researchers and psychiatric epidemiologists have neglected the finding in Bradburn's pioneering study that "positive affect" and "negative affect" are uncorrelated and should be treated as separate dimensions (Bradburn, 1969; see also Jahoda, 1958). Other writers have claimed that well-being and ill-being are a single dimension and/or have suggested that Bradburn's results may be due to response set bias (eg. Campbell *et al.*, 1976). An exception is a recent article by Costa and McCrae (1980) which reports that the personality trait extraversion is related to positive affect and that neuroticism is related to negative affect. In this paper we replicate the finding regarding extraversion. However we regard items measuring neuroticism as being manifestly too similar to items measuring ill-being for us to treat the former as an independent and the latter as a dependent variable.

Our express aim in current Australian research is, as far as possible, to integrate findings from the two bodies of inquiry. Included in our questionnaire are four measures of well-being and three of ill-being (to be described below) and all the types of independent variables listed in Table I. We have also begun to compare and hope to integrate findings arising from use of different research methods: cross-sectional surveys, panel analysis and in-

depth interviews. The objective is to combine findings into explicit causal models of well-being and ill-being.

II. THE AUSTRALIAN (VICTORIAN) PANEL STUDY OF WELL-BEING AND ILL-BEING

We have embarked on what we hope will be a ten year panel study of the correlates and causes of change in well-being and ill-being. Most previous research, based on cross-sectional surveys, permits only static analysis (but see Atkinson, 1982). Clearly, however, both from a social science and a public policy standpoint, it is desirable to understand the dynamics of well-being and ill-being; the causes and processes of change. Panel studies (i.e., studies which involve re-interviewing the same respondents at successive points in time) greatly assist understanding of causation by enabling one to establish time sequences. If one can show that changes in *X* regularly precede changes in *Y*, and that the association is not spurious, one has gone a long way towards establishing causation.

Our Australian research is being conducted in Victoria, Australia's most densely populated State of which Melbourne, the capital city, has 2.75 million people out of a State population of 3.8 million. 942 panel members were first interviewed in 1981 and will be reinterviewed every two years until 1991. Respondents were located in five Local Government Areas (LGAs), four in the Melbourne metropolitan area and one in a provincial centre. The LGAs were selected as being reasonably representative of the State, particularly with regard to socio-economic level.

The main reason for sampling in selected LGAs, rather than throughout the State, was that we believe it important to examine linkages between changes in actual social and economic conditions and changes in people's satisfactions, time uses and sense of well-being. The advantage of LGA sampling for this purpose is that social and economic indicators for Victoria are collected on an LGA basis. We will therefore, in our research, be able to examine the impact of social and economic changes in particular LGAs on satisfactions, time uses and well-being.

Within each LGA, sampling was based on random selection of Census Collectors' Districts, random selection of interviewer starting points, cluster sizes of four and skips to every fourth dwelling unit. At each selected dwelling unit, household members between 18 and 65 years old were listed and the

designated respondents selected by random numbers using a Kish grid (Kish, 1965). Interviewing was conducted by Reark Research, a major social and market research company based in Melbourne.

The sample proved to be an accurate miniature of the LGA populations from which it was drawn. Sample proportions and 1981 Census proportions for the five LGAs are closely matched in terms of age, sex, occupational status, employment status and country of birth, although people with higher levels of formal education were slightly oversampled.

III. WELL-BEING AND ILL-BEING: SEPARATE DIMENSIONS?

In this section we make a case that it is worth provisionally treating Well-Being and Ill-Being as separate dimensions, even though, in presenting findings, we shall also use as one of the dependent variables, an index (Balance of Well-Being and Ill-Being) which combines the two dimensions. The section begins with a factor analysis indicating the extent to which the two dimensions are distinguishable, although not orthogonal. We then briefly describe the four measures of well-being and the three measures of ill-being included in the factor analysis, and provide evidence relating to their reliability and validity. Finally, we put forward three composite measures – the Index of Well-Being, the Index of Ill-Being and Balance of Well-Being and Ill-Being – which will be used as dependent variables in presenting further empirical results.

Table II shows an oblique rotation factor analysis of the 4 measures of well-being and the 3 measures of ill-being included in the Australian survey.

TABLE II

Factor analysis of indices of well-being and ill-being: oblique factor pattern matrix^b

Measures	Factor I: Well-being ^a	Factor II: Ill-being ^a
Andrews and Withey's life-as-a-whole index	86	02
Self-fulfillment index	89	07
3-point 'happy' scale	53	-14
Bradburn's positive affect scale	41	-01
Bradburn's negative affect scale	-11	52
Worries index	-06	60
Somatic complaints index	09	68

^a Correlation between factors = -0.53.

^b Decimal points omitted.

Only two factors had an eigenvalue over 1.0 and the factor loadings suggest that they are relatively distinct, even though the correlation between the factors is -0.53 . The labelling of the two factors as "well-being" and "ill-being" appears clearly justified in terms of the overt content of the survey items (to be described below). The distinction between well-being and ill-being amounts to saying that, to some degree, people experience satisfaction and dissatisfaction, positive and negative feelings about their lives *in the same time period*. High scoring on survey items and indices measuring satisfaction and positive feelings does not necessarily, or in all cases, imply low scoring on items and indices which focus on dissatisfaction and negative feelings.

Measures Which Load on the Well-Being Factor

Life-as-a-whole index. Andrews and Withey's Life-as-a-whole index is probably the most widely used and best validated measure of well-being. The index is simply derived from twice asking respondents, "How do you feel about your life as a whole?" and averaging the results. The scale used by Andrews and Withey is a 7 point Delighted-Terrible (D-T) scale. We have expanded the scale to 9 points to avoid excessive bunching at points 4 to 7 (Headey *et al.*, 1982).

The stability of the two life-as-a-whole items asked 15 minutes apart in our 1981 survey was 0.67. Test-retest reliability in a sample of Melbourne University non-academic employees ($N=45$) interviewed twice, three weeks apart, was 0.51. Structural equation modelling, undertaken by Andrews and colleagues using the LISREL software, indicates that the Life-as-a-whole index has higher construct validity than other well-being measures. Approximately 60% of the variance is valid variance (Andrews and McKennell, 1980).

Last, we report a convergent validity test in which 23 respondents who had been interviewed in conventional survey format consented to in-depth interviews with a qualified psychologist. Two coders independently scored the in-depth interviews, using the D-T scale which respondents had previously used in the survey. The aim was to see whether in-depth interviews would yield similar or divergent results from the survey, thus subjecting the D-T scale to a very exacting convergent validity test. Results were gratifying: the median agreement coefficient for 7 D-T scale items between coder 1 and respondents was 0.55. For coder 2 and respondents the figure was 0.52. Inter-coder reliability was 0.64.

It comes as no surprise that the Life-as-a-whole index loads on the Well-being factor not the Ill-being factor. Although the scale has both a positive (“delighted”) and a negative (“terrible”) end, researchers have consistently found that most respondents answer towards the positive end, and, indeed, that all such scales elicit mainly feelings of satisfaction and not feelings of dissatisfaction which may also be present.

Self-fulfillment index. This index combines four D–T scale items: “How do you feel about ‘the sense of purpose and meaning in your life? ... ‘how exciting your life is?’ ... ‘what you are accomplishing in life?’ ... ‘the extent to which you are achieving success and getting ahead.’ .. Reliability, as measured by Cronbach’s alpha, was 0.86.

Index of positive affect. Bradburn’s Positive Affect Index contains 5 “Yes–No” items relating to positive feelings which respondents may have experienced “during the last few weeks”. In our survey the Cronbach alpha was 0.62. Test-retest reliability of 0.83 was reported by Bradburn (Bradburn, 1969; Block and Zautra, 1981).

3-Point happy scale. Many surveys have included the question, “Taking all things together, how happy would you say you are these days? Would you say you’re very happy, pretty happy or not too happy these days?” A 3-point scale does not enable respondents to discriminate finely and restricts statistical analysis. However, the scale seems worth including for international comparisons.

Measures Which Load on the Ill-Being Factor

We have found that survey items intended to measure rather different concepts – negative feelings about life, anxiety and somatic complaints – are highly correlated. We therefore refer to them, generically, as measures of ill-being in the same way as the measures previously listed are now generally referred to as measures of well-being.

Index of negative affect. Parallel to the Index of Positive Affect, this index is based on five “Yes–No” items relating to negative feelings experienced

“during the last few weeks.” Cronbach’s alpha was 0.59. Bradburn obtained a test – retest reliability of 0.81 (Bradburn, 1969).

Index of somatic complaints. This index is based on respondents’ “Yes-No” answers to whether or not they suffered from 11 somatic complaints e.g. “Have you suffered from loss of appetite?” “Have you been bothered by an upset stomach or stomach ache?” “Have you been bothered by your heart beating hard?” Clearly, anybody could suffer from one or several complaints like these, but suffering from a large number may be regarded as indicating neurosis and, for our purposes, a sense of ill-being. The fact that scores on these 11 items are fairly highly intercorrelated (the Cronbach alpha for the index is 0.69) confirms this interpretation.

Worries index. The Worries Index is constructed from 7 items relating to matters respondents may have worried about “during the last few weeks”. The worries related to money and debts, marital or boyfriend/girlfriend problems, one’s children, work, health, sexual problems and “getting ahead in the world”. A 5-point scale was used for each item, ranging from “not at all worried or never worried” (point 1) to “very worried or always worried” (point 5).

All items intercorrelated over 0.25 (Cronbach’s alpha was 0.78) indicating that it is reasonable to combine them and to regard high scorers as being “worriers” and low scorers as being people with little propensity to worry.

Composite Measures for Presentation of Findings

It would be redundant to present findings relating to all seven measures discussed above. We therefore constructed a composite Index of Well-Being and a parallel Index of Ill-Being, treating these as separate dimensions with the intention of seeing whether their correlates and causes differ. However, given that the distinction between the dimensions might be regarded as borderline, we also elected to construct a combined measure – Balance of Well-Being and Ill-Being – in order to explore the consequences of taking a unidimensional perspective.

Index of well-being. The Index of Well-Being combines and gives equal weight

to the four individual well-being measures. For ease of interpretation scores were transformed to run from 0 to 100. The index proved very serviceable, correlating more highly with all types of independent variables than any of the component measures. This could be taken as evidence of its construct validity.

Index of ill-being. The Negative Affect, Worries and Somatic Complaints Indices are weighted equally and Ill-being is scored from 0 to 100.

Balance of well-being and ill-being. The Balance of Well-being and Ill-being Scale is derived by subtracting scores on the Index of Ill-being from scores on the Index of Well-being. The Balance Scale therefore runs from +100 to -100.

IV. TOWARDS CAUSAL ANALYSIS

This section begins with correlational analysis and then employs path analysis to move towards an understanding of causation. Results are presented for the Index of Well-Being, the Index of Ill-being and Balance of Well-being and Ill-being. Four categories of independent variables are included in the analysis: social background variables, personality measures, measures of the availability of social networks (Henderson *et al.*, 1981) and measures assessing particular life concerns (these are based on the D-T scale). For preliminary inspection we show the Pearson correlations between each independent and each dependent variable (Table III).

An initial point of considerable interest is that social background variables, personality traits, social networks and satisfaction with life concerns all have significant impact on levels of Well-being and Ill-being. Having registered this point, we will mainly focus on columns (1) and (2) of Table III which show interesting *differences* between the correlates of the two indices. (The correlates of the Balance of Well-being and Ill-being will be considered separately.)

Social background variables, notably SES, have more impact on Ill-being than Well-being. This finding is suggested by the correlations in Table III and is confirmed by a multiple correlation analysis indicating that background variables account for 16.5% of the variance in Ill-being and only 9.2% in Well-being. A reasonable interpretation would be that while high status fails greatly to enhance well-being, low status does generate a sense of ill-being.

Turning to measures of personality, it is interesting to consider the relative

TABLE III

Correlations between well-being, ill-being and social background, personality, social network and life concern measures^a

Independent variables	Dependent variables: indices of		
	Well-being (1)	Ill-being (2)	Balance of well-being and ill-being (3)
<i>Social background</i>			
SES	20	-30	30
Sex (F = 1), M = 0)	09	NS	NS
Age	NS ^b	-13	06
Marital status	18	-15	20
Australian born	10	-12	13
Unemployed	-18	19	-22
Health problem	-13	21	-21
<i>Personality</i> ^c			
Extraversion	24	-13	22
Optimism	23	-22	34
Personal competence	37	-44	48
<i>Social networks</i> ^d			
Reliable alliances	17	-15	19
Friendships	27	-14	25
Intimate attachments	31	-18	30
<i>Satisfaction with life concerns</i> ^e			
Leisure	50	-29	48
Friends	43	-17	36
Marriage	42	-30	45
Standard of living	43	-39	49
Sex life	39	-30	42
Job	35	-35	42
Health	30	-39	41

^a Decimal points omitted.

^b NS = Not significant at the 5% level.

^c Trait extraversion is measured by the Eysenck Personality Inventory (EPI). We used Form B (Eysenck and Eysenck, 1971). Trait neuroticism is excluded from the analysis because items are manifestly too similar to items used to measure Negative Affect, Worries and Somatic Complaints.

Optimism is a 2 item scale based on additional Eysenck items not in Form B.

Personal competence is a 4 item scale developed at the University of Michigan (Campbell *et al.*, 1976).

^d These are self-reports of the availability of the social links listed. Essentially they are "count" measures, i.e., they are based on reports of the *number* of friends, acquaintances etc. available to the respondent. Source: Henderson *et al.* (1981).

^e These are indices based on Delighted-Terrible items. For evidence of their reliability, see Headey *et al.* (1982).

importance of different traits for well-being and ill-being. Extraversion, as measured by the Eysenck Personality Inventory, appears somewhat more important for promotion of well-being than for prevention of ill-being. (Path analysis provides evidence that optimism is also more strongly related to well-being; see below.) However personal competence (a feeling that one can control and organise one's life) relates most strongly to both dependent variables.

Social network measures – self-reports of the availability of acquaintances and neighbours who can provide help and support (“reliable alliances”), the availability of friends, and the availability of “intimate attachment” – were originally developed to investigate the hypothesis that the absence of social bonds contributes to onset of neurosis and depression. In the event, only weak relationships have been found (Henderson *et al.*, 1981). It is fascinating here that, while we confirm that social networks have modest effects on levels of ill-being, we find that the presence of friends and “intimate attachments” can contribute substantially to a sense of well-being.

Now life concerns: satisfaction with particular aspects of living (leisure, marriage, job etc.) is strongly correlated with Well-Being but accounts for less variance in Ill-Being. Even here, though, it is useful to point out that some life concerns have greater *relative* impact on ill-being than well-being.¹ Good health is probably taken for granted, and health satisfaction is only moderately correlated with the Well-Being Index. But bad health is a major burden and health (dis)satisfaction is the strongest correlate of the Index of Ill-Being. Satisfaction with material concerns – one's job and standard of living – also has greater relative impact on ill-being than well-being, corroborating the first finding reported above that SES differentially affects ill-being and well-being.

Finally, we consider results relating to the Balance of Well-Being and Ill-Being. A striking finding is that all four types of independent variable correlate more strongly with the Balance Index than with either of its two components. This is a first intimation that the Balance Index may be the best summary measure of people's overall feelings about their lives.

Path Analyses

We now attempt to move closer to an understanding of the *causes* of well-being and ill-being. There is an everlasting epistemological dispute about the meaning of the word “cause”. For present purposes, we shall be willing to

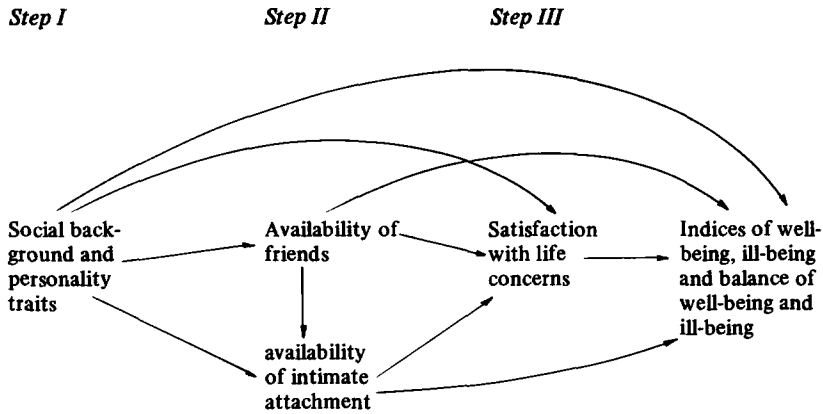


Fig. 1. Time sequence assumptions in analysis of causes of well-being and ill-being. (Variables not significant at the 5% level with any dependent variable have been omitted. Variables included in Table III but now omitted are sex, age, "Australian born" and "reliable alliances".)

regard X as a cause of Y if (i) changes in X precede changes in Y , (ii) X is correlated with Y and (iii) the correlation is not spurious in the sense that it does not depend on some third (fourth, fifth ...) antecedent variable. At present, prior to collection of panel data, we cannot be certain of time sequences – we cannot be certain that changes in X precede changes in Y . So, in developing a model for path analysis, we have to make assumptions about time sequences. Our assumptions are set out in Figure 1.

Social background variables and personality traits are shown at Step I in the time sequence. In statistical jargon, they are treated as "exogeneous"; we do not seek to account for correlations among them. The cautious reason for grouping them together is that to do otherwise would involve us in the debate about whether personality results from "nature" or "nurture". Those, like the British psychologist Hans Eysenck, who believe that personality is largely genetic ("nature") would put personality first in the causal sequence. Those who believe that personality traits derive more from family and social experiences ("nurture") would put the latter variables first. We are in no position to buy into this argument, so we adopt an agnostic stance.

At Step II we introduce social networks; measure of the availability of friends and of "intimate attachment". It is plausible to regard people's capacity to form social bonds as dependent in part on their personalities (and per-

haps on their social background) and panel analysis by Henderson *et al.* has confirmed this (1981, Ch. 10). We introduce the additional assumption that availability of friends may be treated as antecedent to availability of intimate attachment. The reason for this is that people presumably have to be ordinary friends before they have a chance to become intimate friends.

At Step III we include satisfaction with life concerns. It is doubtful whether relationships between life concerns and well-being and ill-being should be regarded as causal. Nevertheless the immediate antecedent of a change in well-being is almost bound to be a change in satisfaction with one or more life concerns (for empirical findings, see Headey *et al.*, 1982). So it seems reasonable to include life concerns at Step III of the analysis immediately prior to measures of well-being and ill-being.

A final point in regard to Figure 1 is that we have not eliminated on a priori grounds any of the possible recursive paths among variables. Our view is that the current state of theory and knowledge does not permit any such a priori decisions. We will, of course, find that empirically some of the paths are not statistically significant (see below).

We have used Alwin and Hauser's method of presenting path analyses (Alwin and Hauser, 1975). This method is ideal for situations in which no or few paths can be eliminated on a priori grounds. It enables one to construct straightforward tables showing the *total effect* of each antecedent variable on a dependent variable and decomposing this total effect into *direct* and *indirect effects* (paths). For reasons of space, the tables given below show only the effects of antecedent variables on the Indices of Well-Being, Ill-Being and Balance of Well-Being and Ill-Being.

Table IV shows the effects of social background, personality, social bonds and satisfaction with life concerns on the Index of Well-Being.

The "total effects" column shows that people's socio-economic circumstances, their personalities, social networks and satisfaction with life concerns all affect their level of well-being. Overall, however, it is clear that socio-economic variables have rather less impact than the other three types of variable. Of the personality variables both personal competence and optimism are strongly related to a sense of well-being. Extraverts are in better shape than introverts but the relationship is perhaps not as strong as might have been expected. Of the two social bonding measures, having "intimate attachments" makes a greater contribution to well-being than simply having a network of friends. Among life concerns, leisure satisfaction emerges as surprisingly

TABLE IV
Well-being: a path analysis

Dependent variable	Independent variables	Total effects ^{a, b}	Availability of friends	Indirect effects ^{a, b} via Availability of attachment	Leisure, job, health, sex life, friends, marriage, standard of living	Direct effects ^{a, b}
Index of well-being	SES	08	01	00	01 ^c	06
	marital status	09	00	14	03 ^c	-08
	unemployed	-08	-01	00	-04 ^c	-03
	health problem	-03	01	-01	-01 ^c	-02
	extraversion	16	02	01	08 ^c	05
	personal competence	25	02	00	12 ^c	11
	optimism	22	02	02	05 ^c	13
	availability of friends	15	02	01	06 ^c	08
	availability of attachment					
	ment	24			12 ^c	12
	leisure	22				22
	job	10				10
	health	02				02
	sex life	11				11
	friendship	12				12
	marriage	09				09
standard of living	12				12	

^a Decimal points have been omitted.

^b Coefficients below 08 are not significant at the 5% level.

^c These coefficients represent the combined indirect effect of 7 life concerns.

important, although it is possible that the relative magnitude of its Beta is somewhat arbitrarily inflated by multicollinearity.²

The only variables included in the analysis which are not significant at the 5% level relate to health. Having a health problem which restricts activities, and also satisfaction with one's health, appear almost unrelated to well-being. However, as we shall see, health substantially affects ill-being.

The "indirect effects" columns suggest just one relationship of substantive significance; it relates to marriage. Married people experience a greater sense of well-being than unmarried people, largely because being married increases the probability of "intimate attachment" (indirect effect = 0.14). However if a marriage is not an intimate, sharing relationship its effect on well-being may actually be negative; the direct effect of marital status on well-being is -0.08. This is a fascinating finding, the implications of which are perhaps clarified by noting indirect effects of being married which are *not* significant. Being married might have been associated with well-being via satisfaction with one's sex life, or even standard of living. Apparently this is not the case; the indirect effect of seven life concerns combined, including sex life and standard of living is only 0.03. In short, the presence or absence of "intimate attachment" is the key factor in determining whether being married enhances or detracts from well-being.

The "direct effects" column indicates that two personality traits – personal competence and optimism – and also "intimate attachment" have significant linkages to well-being. Initially this finding surprised us because we had expected that direct effects would be slight and that the impact of antecedent variables (Steps I and II in Figure 1) would be transmitted to well-being via satisfaction with life concerns. Indeed, if one takes the view that life concerns are components of life-as-a-whole, and that levels of satisfaction with concerns combine additively to account for satisfaction with life-as-a-whole (Andrews and Withey, 1976; Headey and Wearing, 1981) then it follows that effects of antecedent variables would *have* to be transmitted via life concerns. How, then, can we account for the direct effects of personal competence, optimism and "intimate attachment" on well-being? There are two possible explanations. One is that if we had included several more life concerns in the analysis, instead of just seven, direct effects would have been much reduced. In fact, alternative runs with additional life concerns suggest that this is not the case. The other explanation is that personality variables (personal competence and optimism) and the benefits of "intimate attachment" can produce

TABLE V
Ill-being: a path analysis

Dependent variable	Independent variables	Total effects ^{a, b}	Availability of friends	Indirect effects ^{a, b} via Availability of attachment	Leisure, job, health, sex life, friends, marriage, standard of living	Direct effects ^{a, b}
Index of ill-being	SES	-17	00	00	-02 ^c	-15
	marital status	-05	00	-04	-03 ^c	02
	unemployed	09	00	00	03 ^c	06
	health problem	12	00	00	04 ^c	08
	extraversion	-06	-01	00	-04 ^c	-01
	personal competence	-34	00	-01	-10 ^c	-23
	optimism	-08	00	-01	-03 ^c	-04
	availability of friends	-02	00	00	-02 ^c	00
	availability of attachment	-07				
	leisure	-07			-04 ^c	-03
	job	-13				-07
	health	-22				-13
	sex life	-04				-22
	friendship	03				-04
	marriage	-06				03
standard of living	-08				-06	
						-08

^a Decimal points omitted.

^b Coefficients below 08 are not significant at the 5% level.

^c These coefficients represent the combined indirect effect of 7 life concerns.

a general, suffused sense of well-being over and above what can be accounted for by satisfaction with specific domains of life. *Post hoc*, this proposition seems both plausible and of considerable theoretical interest.

Table V shows the effects of exactly the same set of independent variables on the Index of Ill-Being. Some interesting contrasts emerge when we compare the two sets of results. SES, or rather the experiences associated with social status, have greater impact on ill-being than well-being. As suggested earlier, it appears that, while high status does not much enhance well-being, low status is more likely to produce a sense of ill-being. Suffering from a health problem which limits activities is also likely to generate a sense of ill-being.

The relative effects of the three personality traits measured here are substantially different for well-being and ill-being. A low sense of personal competence, a feeling that one cannot control one's life, is by far the most important single contributor to ill-being. The "total effect" of personal competence on ill-being is -0.34 . By contrast, extraversion and optimism, which were fairly strongly linked to well-being are only slightly if at all related to ill-being.

Confirming earlier bivariate correlations (Table III), the path analysis indicates that social networks contribute little to relief of ill-being. This finding is counter-intuitive but in line with previous Australian research (Henderson *et al.*, 1981).

Life concerns differentially affect ill-being and well-being. Low levels of satisfaction with one's physical health contribute substantially to a sense of ill-being. Health satisfaction, as we saw, had no significant effect on well-being, the explanation presumably being that good health is regarded as normal and not consciously regarded as a blessing. Material concerns—standard of living and jobs—are also of greater relative significance for ill-being than well-being. This suggests that material dissatisfaction generates a sense of ill-being, but being well-off is less likely to be felt as a positive benefit. On the other side of the coin, satisfaction with leisure and friendships is less important for the relief of ill-being than for the promotion of well-being.

The two variables with the most striking direct effects on ill-being are personal competence (-0.23) and SES (-0.15). The impact of the former variable is particularly interesting because it suggests that personality can produce a diffuse sense of ill-being, just as of well-being.

Table VI gives a parallel path analysis for the Balance of Well-Being and Ill-Being Index.

TABLE VI
Balance of well-being and ill-being: a path analysis

Dependent variable	Independent variables	Total effects ^{a, b}	Availability of friends	Indirect effects ^{a, b} via Availability of attachment	Leisure, job, health, sex, life, friends, marriage, standard of living	Direct effects ^{a, b}
Balance of well-being and ill-being	SES	15	01	00	01	13
	marital status	09	00	12	03	-06
	unemployed	-11	-01	00	-04 ^c	-06
	health problem	-09	01	-01	-03	-06
	extraversion	13	02	01	06	04
	personal competence	35	01	00	14	20
	optimism	17	00	03	04	10
	availability of friends	10	00	00	06	04
	availability of attachments	19				10
	leisure	18			09	18
	job	15				15
	health	14				14
	sex life	10				10
	friendship	05				05
marriage	11				11	
standard of living	11				11	

^a Decimal points omitted.

^b Coefficients below 08 are not significant at the 5% level.

^c These coefficients represent the combined indirect effect of 7 life concerns.

Perhaps the most important point arising here is that most independent variables have stronger relationships with the Balance Index than with Well-Being or Ill-Being separately. This is clear both from the individual coefficients in the "total effects" column and from a multiple correlation which indicates that all variables combined account for 58.2% of the variance in the Balance Index, compared with 48.5% in Well-Being and 37.5% in Ill-Being. The fact that a range of variables which one might plausibly expect to account for feelings of well-being and ill-being are *most* strongly related to the Balance Index indicates that it may after all be the best dependent measure. Perhaps – and this is tentative – it best captures people's feelings about the totality of their lives.

We see from the "total effects" column that all variables are significantly related to the Balance Index except satisfaction with friendship. Among social background variables SES is most important. Personal competence is the most crucial of the personality variables but optimism and extraversion also have considerable effect. As we have seen throughout, availability of "intimate attachment" matters more than availability of friends. The ranking of life concerns essentially repeats earlier results; leisure satisfaction is most important to well-being and dissatisfaction with health and job are most likely to generate a sense of ill-being. By arithmetic necessity these concerns relate strongly to the Balance Index.

The only substantively interesting indirect effect in Table VI confirms the earlier finding that married people experience greater life satisfaction than unmarried people primarily because marriage generates a sense of "intimate attachment".

CONCLUSION

The most interesting, but still tentative conclusion to emerge from this investigation is that a "positive" sense of well-being appears to result from a rather different combination of causes than a "negative" sense of ill-being. A sense of ill-being (worry, somatic complaints, negative affect) results quite largely from a low sense of personal competence, a feeling that one cannot control and plan one's life. It also results from unfavourable socio-economic and family circumstances. A sense of well-being, on the other hand, seems to depend on a wider range of personality variables – extraversion and optimism as well as personal competence – and also on the availability of a close, sup-

portive social network. Favourable socioeconomic circumstances are less likely to promote well-being than unfavourable circumstances are to foster a sense of ill-being.

When we consider which domains of life, or life concerns, contribute most to well-being and ill-being a somewhat similar bifurcation of findings is apparent. Satisfaction with leisure and friends contribute strongly to well-being. A sense of ill-being is most likely to result from dissatisfaction with one's health and/or one's material standard of living.

If our own subsequent research, and research by other investigators, confirm that well-being and ill-being are somewhat differently caused, this may well have major public policy implications. Conventional welfare policies are intended to relieve ill-being. Quite different policies – we term them, positive welfare policies – may be required to enhance satisfaction with key aspects of living and promote well-being (Headey and Wearing, 1981).

Concern for policy implications is one reason for considering separate measures of well-being and ill-being. We have noted, however, that for other purposes it may be preferable to use a combined Balance of Well-Being and Ill-being Index. This measure shows the strongest relationships with the social background, personality, social network and life concern variables included in the causal framework.

Data for this article have come from the first wave of an Australian panel study. Subsequent waves (1983, 1985 ... 1991) will enable us to explore the causes and dynamics of well-being and ill-being more effectively. It should prove possible to establish time sequences; to discover whether changes in X precede changes in Y or vice versa. Non-recursive analysis should also be feasible. Public policy implications may follow. Our strategy is first to understand the "normal" causes and processes of change, prior to recommending policy interventions designed to relieve ill-being and enhance well-being. The preliminary causal analysis offered in this paper will doubtless require considerable modification, but is reported at this stage so that other researchers can react and improve on it.

NOTES

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¹ One has to say "relative" because *all* life concerns correlate more highly with Well-Being than Ill-Being. This is presumably partly due to "methods effects" since all life concerns and two of the four indices which comprise the Index of Well-Being are measured on the Delighted–Terrible scale.

² Leisure satisfaction is particularly highly correlated with friendship satisfaction; $r = 0.46$.

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