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An independent academic psychologist, based in England, who has written extensively on different areas of psychology with an emphasis on the critical stance towards traditional ideas.

A complete listing of his writings at <http://kmbpsychology.jottit.com>.

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1. DOING THINGS FOR GOOD, BAD, AND OWN REASONS

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1.1. INTRODUCTION

"Motivation drives people (and other animals) to pursue life-sustaining activities and avoid life-shortening ones, to set goals and pursue them, to form likes and dislikes, and to think and feel in advantageous ways" (Hofman et al 2012 p1318). Motivations can be good (eg: to help others), bad (eg: selfish behaviour), or for other reasons. The article looks at examples of these.

1.2. EMPATHY AND ALTRUISM

When examining the evolution of altruism ¹, empathy can be seen as the mechanism to motivate altruism ². Empathy is an automatic response to the emotional state of others, and avoids the reliance on cognitive processes

¹ Nowak (2012) argued that co-operation and altruism are not an anathema to evolutionary theory, which has always emphasised selfish behaviour. As Nowak (2012) observed: "Millions of years of evolution transformed a slow, defenceless ape into the most influential creature on the planet, a species capable of inventing a mind-boggling array of technologies that have allowed our kind to plumb the depths of the ocean, explore outer space and broadcast our achievements to the world in an instant. We have accomplished these monumental feats by working together. Indeed, humans are the most co-operative species - super-co-operators, if you will" (p24).

² Recent work by Riedl et al (2012) by shown an interesting difference between humans and chimpanzees in terms of pro-social behaviour. Co-operation among individuals and the deterrence of free-riders can be achieved by "third-party punishment", where a transgressor is punished by individuals not affected by the behaviour. In other words, "A" sees "B" cheat "C", and then "A" punishes "B". In this situation, "second-party punishment" (revenge) would be "C" punishing "B".

Riedl et al (2012) reported experiments with chimpanzees that showed second-party, but not third-party punishment. One chimpanzee (thief) was given the opportunity to steal the food from another chimpanzee (victim) and this was seen by a third chimpanzee (observer). Then the opportunity to punish the thief was given by stopping them get some food (ie: pulling a string that collapsed a table containing food and thus put it out of reach). Victims punished thieves, but observers did not (third-party) even when the victim was kin. The researchers observed: "Third-party punishment as a means of enforcing co-operation, as humans do, might therefore be a derived trait in the human lineage".

(De Waal 2008).

De Waal (2008) distinguished three different levels of empathy:

i) Emotional contagion - The adoption of another's emotional state (eg: one baby starts crying and others follow, or copying an alarm call or response of another animal). This behaviour can be viewed as a product of the synchronising of individuals in a group.

ii) Sympathetic concern - This is "concern about another's state and attempts to ameliorate the state" (De Waal 2008 p283) (eg: attempts to console distressed individuals).

iii) Empathetic perspective-taking - This is understanding another's specific situation while experiencing an emotional response towards it.

More generally, there is a debate as to whether empathy is a cognitive or affective construct. With the former, individuals are able to imagine the internal state of another person, while the affective construct allows individuals to match their emotions to that of others. "Dispositional empathy" is also used to refer to "the tendency to react to other people's observed experiences" (Konrath et al 2011).

In terms of measuring empathy, it can be operationalised using scales, like the Davis Interpersonal Reactivity Index (IRI) (Davis 1983). The 28 items are divided into four sub-scales measuring:

- Empathic concern (EC) - the feelings of sympathy for others' misfortunes (eg: "I often have tender, concerned feelings for people less fortunate than me")³.
- Perspective taking (PT) - the ability to take another's point of view (eg: "I sometimes try to understand my friends better by imagining how things look from their perspective").
- Fantasy (FS) - the ability to identify with fictional characters (eg: "I really get involved with the feelings of the characters in a novel").
- Personal distress (PD) - the self-oriented feelings to others' distress (eg: "When I see someone who badly

³ Singer et al (2004) reported high correlations (0.54-0.72) between scores on this sub-scale and activity in certain areas of the brain. Vul et al (2009) were "puzzled about how such impressively high correlations could arise" in this and other similar studies (appendix 1A).

needs help in an emergency, I go to pieces").

Konrath et al (2011) performed a meta-analysis on seventy-two studies using the IRI with US college students between 1979 and 2009 to see if empathy had declined with the reported rise of narcissism (Twenge et al 2008). The researchers found a decline in EC and PT scores over the period, but no change for FS and PD scores.

Konrath et al (2011) speculated about the reasons for the decline in empathy among students:

- Changing attitudes in society than encourage self-centredness.
- Increases in violence and bullying.
- Increased use of communication technology (eg: SMS) rather than face-to-face interactions.
- Changes in parenting that includes less promotion of others' perspectives.
- Increased expectations of success.

Other explanations include increased social isolation with increasing divorce, and less reading (to encourage character identification) (Zaki 2011).

1.3. PRO-SOCIAL BEHAVIOUR

What is the relationship between wealth (social class/socio-economic status; SES) and pro-social behaviour? ⁴ Are richer individuals more generous because they have more resources to share and poorer individuals more selfish because they lack resources, or are lower class individuals more generous because they are aware of the needs of others and higher class individuals more selfish and less aware of others' needs? The answer to this question can be opinion based on political beliefs about wealth distribution.

However, emerging research is showing that "lower class individuals orient to the welfare of others as a means to adapt to their more hostile environments and that this orientation gives rise to greater pro-social behaviour" (Piff et al 2010 p771).

Piff et al (2010) showed this behaviour in four experiments.

⁴ Serotonin is known to be linked to pro-social behaviour - high levels produce such behaviour while low amounts result in anti-social behaviour (Crockett 2009). For example, studies have found that serotonin-enhancing drugs (eg: tryptophan supplement) increases co-operation in games and problem-solving, while tryptophan depletion (which reduces serotonin in the brain) does the opposite (Crockett 2009). While Raleigh et al (1991) found that male vervet monkeys with drug-induced enhanced serotonin achieved dominance status (through pro-social behaviour like grooming), but animals with reduced serotonin remained subordinate (because of increased aggression).

Experiment 1

One hundred and fifteen undergraduates from a university in California, USA, whose SES was based on subjective rating of their position on a ten-rung ladder, played the dictator game. In this game, an individual is given ten points and told to share as much (or little) as they want with an unknown and unseen person in the next room. The more the player is willing to share, the higher their level of altruism. Lower class individuals allocated significantly more points to the stranger than the upper class individuals.

This is experimental support for surveys of charitable contributions which show that poorer individuals give relative more of their income in the USA (eg: 4.2% of income <\$25 000 vs 2.7% of >\$100 000 in 2002) (Piff et al 2010).

Experiment 2

Social class/SES is one of a number of variables, like ethnicity or religious affiliation, that could explain the results in Experiment 1. Piff et al attempted to isolate social class as the cause by manipulating an individual's perception of their SES in Experiment 2.

Social class was manipulated by asking participants to concentrate on the bottom or top of the ten-rung ladder when placing themselves. Focus on the bottom was intended to encourage individuals to inflate their rank, and focus on the top to deflate their rank. It was predicted that the latter would increase their pro-social behaviour. Pro-social behaviour was measured by amount of income that individuals would give to charity in a survey of how to spend annual income.

Among 81 undergraduates from a North American university, manipulation of SES had a significant effect. Individuals who deflated their rank said they would give more of their income to charity than individuals who inflated their rank (mean: 4.65% vs 2.95%⁵). These findings were taken as evidence of causality:

"Specifically, inducing participants to momentarily perceive themselves as relatively lower than others in socio-economic standing caused them to endorse more generous donations to charity" (Piff et al 2010 p776).

Experiment 3

The next question was why are lower class individuals more pro-social in their behaviour, and

⁵ The overall mean was 3.78%.

Experiment 3 tried to give an answer. It was proposed that lower class individuals have more egalitarian values (ie: favour equality and sharing of resources), and this accounts for their generosity.

This was tested with the trust game. In this game, a player is given 30 points and they say how much they want to share with an unknown and unseen person, who will then choose how much to share in return. The more the first player gives is a sign of trust.

This experiment was conducted online with 155 volunteers, whose social class was calculated based on self-reported annual income, and educational qualifications. Lower class individuals allocated significantly more points to the partner than higher class individuals.

Experiment 4

This experiment investigated helping behaviour and social class with ninety-one participants in a large Canadian city. Social class was based on annual income.

The researchers created a scenario where a participant is paired with a confederate to perform certain tasks. The confederate arrives late and shows distress. Helping behaviour was measured by the participant choosing to do more tasks than their partner (distressed confederate). Lower class individuals chose significantly more tasks than upper class individuals. In a condition where participants watched a video about child poverty before the experiment to increase awareness of suffering and encourage helping, there was no difference in behaviour based on social class. Piff et al noted: "That the compassion manipulation eliminated class differences in pro-social behaviour suggests that upper and lower class individuals do not necessarily differ in their capacity for pro-social behaviour. Rather, lower class individuals may be higher in baseline levels of compassion than their upper class counterparts, and it may be this differential that – unless moderated – drives class-based differences in pro-sociality" (p780).

Taking the four experiments together, lower social class individuals are more pro-social than higher individuals because of greater trust (egalitarian values) and compassion.

1.4. LABOUR OF LOVE

There is a strong belief that "effort equals

quality" (or the "IKEA effect" ⁶) (Spinney 2011). Put another way, individuals place value on things that involved effort to acquire or make.

Norton et al (2012) (appendix 1B) asked participants to assemble IKEA boxes, build Lego objects, or fold paper in origami shapes. Participants then bid for their creations as well as expert-made equivalents. The participants were willing to pay more for their creations, irrelevant of the quality, because it was the fruit of their labours.

Similarly individuals are willing to pay more for objects that they themselves have customised (adapted in some way from the original objects). Franke et al (2010) called it the "I designed it myself" effect - "the value increment a subject ascribes to a self-designed object, arising purely from the fact that she feels like the originator of the object" (p125).

Franke et al (2010) see the "I designed it myself" effect evident in "mass customisation" products. These are mass produced items, like T-shirts, that the consumer customises for themselves (eg: designs their own logo for the T-shirt). The authors explain this effect thus: "individuals who created an object interpret it more as 'theirs' than individuals who merely bought it, and in turn, subjective ownership feelings increase the subjective value of the product" (p127). The subjective feelings of ownership is called the "endowment effect" (Reb and Connolly 2007).

The "endowment effect" is influenced by factors like length of ownership, "investing the self in the object", and controlling the object (Franke et al 2010).

Franke et al (2010) tested four hypotheses about the "I designed it myself" effect in five studies:

- 1 - Individuals will value products customised by themselves more than the same product "off the shelf".
- 2 - The subjective value of mass customisation products is based on the feeling of accomplishment.
- 3 - The subjective value will be higher for items that fit with what the consumer wants.
- 4 - The more contribution that an individual makes to a product's design, the greater the subjective value of the product.

⁶ It is "the increased valuation that people have for self-assembled products compared to objectively similar products which they did not assemble" (Norton et al 2012 pp453-454).

In the first study, 37 business students in Austria were offered the chance to design a T-shirt, a scarf, or a mobile phone cover via an Internet "mass customisation" toolkit. This gives the basic product and the consumer customises it as they want.

This was a qualitative study, so after designing the product, the students were interviewed in-depth about their feelings towards the creation. A majority of the students reported strong feelings towards the products because they had been involved in its production. One speaker said: "it has personal value and personal uniqueness". The researchers argued that there was support for the hypotheses, albeit from a small study.

The second study was an experiment to test the first hypothesis. One hundred and fourteen students were divided into three groups for this study about the subjective value of a T-shirt. Group 1 were given an "off the shelf" T-shirt with a college logo to inspect, while groups 2 and 3 produced a logo from a limited selection using a website. After this, all participants were offered the chance to bid for the T-shirt. But Group 3 could only bid for an "off the shelf" T-shirt not the one they had designed. This bidding technique is known as the "willingness to pay" (WTP) paradigm.

Hypothesis 1 predicts that the WTP will be higher for T-shirts that involved the participants in designing the logo. The findings confirmed this prediction. Participants in Group 2 bid more than the other two groups (mean: 6.85 euros), and it was significantly more than the "off the shelf" product (Group 1) mean: 4.75 euros; Group 3 5.26 euros).

The third study tested the second hypothesis that individuals would bid higher for their own creations because of feelings of accomplishment. One hundred and sixteen business students were asked to choose from a selection of standard ski designs or self-design their own skis via a website. Afterwards, the participants completed a questionnaire about the feeling of accomplishment before bidding for the skis.

Participants who designed their own skis were willing to bid significantly more than the participants who could only choose "off the shelf" skis (mean: 74.42 vs 45.89 euros). The former reported higher feelings of accomplishment, and this was associated with a WTP more. Hypothesis 2 was supported.

In Study 4, which tested the third hypothesis, 129 business students did the same as Study 2. Individuals were given a T-shirt or could design a logo for the T-shirt. But another independent variable was added which was the attractiveness of the design. Attractiveness was controlled by the choice of logos that the participants

could design. It was predicted that individuals who designed an attractive T-shirt would have a WTP more. This was supported. Participants in the self-design/attractive group were willing to bid a mean of 10.25 euros compared to 7.18 (self-design/unattractive), 5.35 (off the shelf/attractive), and 5.24 euros (off the shelf/unattractive).

Study 5 was an experiment that tested hypothesis 4 that the greater the contribution to the product's design the more the individual is willing to bid. Sixty-six students were divided into two groups to design a wrist-watch via a website. The "low contribution group" was offered a small number of elements to customise (eg: choice of six background colours and six face designs), while the "high contribution group" could customise more attributes with greater choices.

Participants in the "high contribution group" were willing to pay an average of 30.34 euros for their creation compared to 19.21 euros in the "low contribution group". This finding supported hypothesis 4.

1.5. RESISTING TEMPTATION

"Subjectively, motivation takes the form of desire, defined as a feeling of wanting" (Hofman et al 2012). But not all desires can be fulfilled or enacted. There may be times when desires conflict with each other (or with a person's goals and values) and when resistance (self-control) is required. Thus there are unproblematic desires and problematic ones (temptations).

The ability to resist temptation will be influenced by internal and external factors. Internal factors relate to personality including the trait of self-control, perfectionism, and "narcissistic entitlement" ("a stable and pervasive sense that one deserves more and is entitled to more than others"; Campbell et al 2004; appendix 1C). The external factors include the mere presence of others, others showing self-control or not, alcohol intoxication, and the environment where the behaviour takes place (Hofman et al 2012). Table 1.1 summarises the general view of how different factors influence resistance to temptation.

Hofman et al (2012) investigated resistance to temptation using a technique called "experience sampling" (appendix 1D). This involved participants carrying a Blackberry device for a week, which randomly beeped at different times on seven occasions each day, and individuals completed a questionnaire about their desires, temptations, and self-control in the previous thirty minutes. The participants were 208 adults in Wurzburg, Germany (who produced over 7000 reports).

FACTOR	RESISTANCE TO TEMPTATION
Trait of self-control	High self-control = more resistance (by avoiding temptation through effective habits and routines; de Ridder et al 2012).
Perfectionism	Higher = greater resistance.
Narcissistic entitlement	High = less resistance.
Alcohol intoxication	Less resistance.
Mere presence of others	Increases resistance.
Enactment models (others showing self-control or not)	Copy others.
Location of behaviour	Increased resistance in work and public situations and less at home.

Table 1.1 - Some key factors influencing the resistance to temptation.

The most commonly reported desires were for food, drink, or sleep, followed by media use, leisure, and social contact. Approximately half the time sampled individuals reported a desire and half of these were described as conflicting with something else. So the need to resist temptation was quite common, and most participants reported doing so successfully. Only on 3% of occasions did they report failing to resist.

Obviously, the strength of the desire influenced resistance with stronger desires more likely to be enacted (ie: less resistance). Participants rated desire strength on a scale from 0 ("no desire at all") to 7 ("irresistible"), and the duration of the desire on a ten-point scale (from "0-5 mins" to ">5 hrs"). Desires rated as "irresistible" were enacted on 71% of occasions. Hofman et al (2012) viewed the resistance to such desires as surprisingly high.

In terms of the factors predicted to influence self-control:

a) Trait of self-control - So, "those high in trait self-control reported lower rates of resistance, suggesting that they did not have to use self-control as often as those low in trait self-control. Viewed in concert, all of these results fit well with the alternative view of trait self-control as operating via adaptive habits and anticipatory coping. By avoiding tempting situations, motivational conflicts, and problematic desires, people with good self-control apparently manage to avoid having to resist strong desires that conflict with their goals and values" (Hofman et al 2012 p1330).

b) Perfectionism - Individuals high in perfectionism

had strong desires which needed resisting (and this was different to the trait of self-control), leaving them as "tortured souls" always fighting the conflict between their exceptionally high standards and their desires.

c) Narcissistic entitlement - Individuals high in this trait reported little conflict because they tended to enact their desires, and perceived few reasons to refrain.

d) Alcohol intoxication - Resistance to desire was significantly weaker at high levels of alcohol intoxication (compared to no alcohol), but not at weak and moderate levels of intoxication.

e) Mere presence of others - Individuals were more to resist high rather than low conflict desires when others were present (compared to when alone). The presence of others also reduced the enactment of all desires. "The presence of others may reduce opportunities to do what one wants and may trigger automatic inhibition processes that curtail action. People thus do adjust their behaviour according to social demands, and many of these adjustments may be automatic and unconscious, so that people end up refraining from acting out their desires" (Hofman et al 2012 p1331).

f) Enactment models of desire - Being with people who were already fulfilling the desire reduced resistance (but not conflict). For example, a dieter eats the fattening food like everybody else around them, but still feels conflicted about it.

g) Location - Put simply: "While at work, people experienced much more conflict over their desires and were more prone to resist them, compared to all other locales. As a simple example, among the strongest and most conflicted desires in our sample were the desires for sleep and leisure. But hardly any employers tolerate sleeping or relaxing on the job, so people struggled to resist those desires when they were at work, unlike while being at home" (Hofman et al 2012 p1332).

Hofman et al (2012) concluded: "With regard to desire, at least, everyday life may be an ongoing drama in which inner factors set the stage for motivation and conflict, while external factors contribute to how well people manage to resist and enact their current wants and longings" (p1332).

1.6. APPENDIX 1A - CORRELATIONS BETWEEN SELF-REPORTS AND BRAIN SCANS

Vul et al (2009) were puzzled by high correlations between research suggests a ceiling of 0.70⁷. One major issue is the reliability of self-report scales, and, in particular, of fMRI (functional magnetic resonance imaging) measures like blood oxygenated level dependent (BOLD) signals.

Functional image volumes, collected by fMRI scans, are made up of many measurements of the BOLD signal in cube-shaped regions of the brain called "voxels" (volumetric pixels) (between 1 - 125 mm³), giving between 40 000 to 500 000 measures per voxel. A functional image volume is taken every 2-3 seconds. This produces a lot of data to be averaged. Usually the contrast in activation is used for convenience. The choice of voxels is a subjective decision (Vul et al 2009).

Vul et al (2009) found that 28 of 52 studies that reported high correlations between specific brain activity (detected via neuroimaging) and self-reports or behavioural measures had computed thousands of correlations and selected the correlations that exceeded a certain threshold. This type of analysis could inflate correlations, and "even produce significant measures out of pure noise" (Vul et al 2009). This can be called the "non-independence error".

Vul et al (2009) suggested selecting voxels "blind" to the size of the correlation.

1.7. APPENDIX 1B - NORTON ET AL (2012)

Norton et al (2012) designed four experiments to test the nature of the "IKEA effect".

Experiment 1A

Fifty-two students at a US university were either given a plain black IKEA storage box to assemble (experimental condition) or a fully assembled one to inspect (control condition). Participants were then offered the chance to buy the box by making a bid. The average bid in the experimental condition was

⁷ "There are several reasons why a true correlation of 1.0 seems highly unrealistic. First, for any behavioural trait, it is far-fetched to suppose that only one brain area influences this trait. Second, even if the neural underpinnings of a trait were confined to one particular region, it would seem to require an extraordinarily favourable set of coincidences for the BOLD signal (basically a blood flow measure) assessed in one particular stimulus or task contrast to capture all function relevant to the behavioural trait, which after all reflects the organisation of complex neural circuitry residing in that brain area" (Vul et al 2009 footnote 7).

significantly higher than in the control group (ie: 63% more) (\$0.78 vs \$0.48). This experiment demonstrated the "IKEA effect".

Experiment 1B

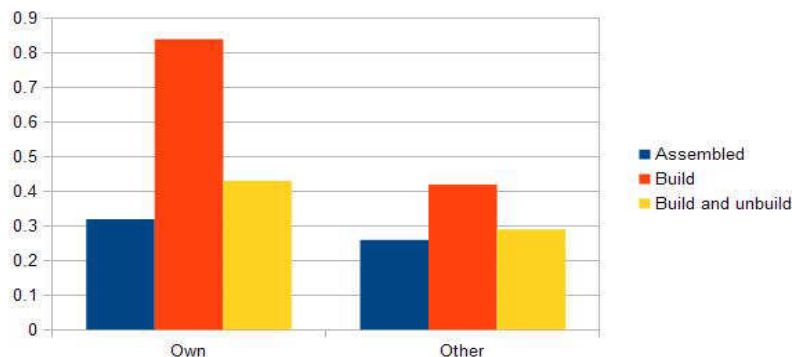
One hundred and four students at another US university were recruited for this experiment. Half of them built an origami crane or frog from instructions (builders), and half did not (non-builders). All participants were then asked to say how much they would bid for their own creations (builders), somebody else's creation (non-builders), or expert origami figures (non-builders bid).

Builders valued their own creations five times greater than non-builders did (mean: \$0.23 vs \$0.05), and the same almost as non-builders bid for the expert figures (mean: \$0.27). This experiment showed that individuals valued their own creation because of subjective feeling not because the items were objectively good.

Experiment 2

One hundred and eighteen more students were asked to bid for pre-assembled Lego shapes of a helicopter, a bird, a dog, or a duck (control condition), ones they built themselves (build condition), or ones they built and then disassembled (build and unbuild condition).

Participants bid significantly more for their own creations in the build condition than for the other participants' creations, but the difference was not significant in the build and unbuild condition (figure 1.1). This experiment showed that destroying an item created reduces the "IKEA effect".



(Data from Norton et al 2012 table 1)

Figure 1.1 - Mean bids (\$) for Lego shapes.

Experiment 3

In this experiment 39 more students were asked to assemble an IKEA storage box, but some of them were stopped before completion. This produced two conditions - build and incomplete build. Participants bid significantly more for their completed creations than the half-finished ones (mean: \$1.46 vs \$0.59). This experiment confirmed that the "IKEA effect" only applies for completed creations.

1.8. APPENDIX 1C - CAMPBELL ET AL (2004)

Campbell et al (2004) developed the Psychological Entitlement Scale (PES) with nine items (each rated on a seven-point scale) (eg: "Great things should come to me"; "I demand the best because I'm worth it"; "I feel entitled to more of everything"; "People like me deserve an extra break now and then").

It was found to have a test-retest reliability over one month of 0.72, and 0.70 over two months among undergraduates at Iowa State University, USA.

In a number of studies by Campbell et al (2004), the PES score was found to correlate to behavioural measures of entitlement (eg: number of sweets taken from a bowl; amount of salary allocated to self compared to others in hypothetical company scenario). Students were also questioned about their romantic relationships. High PES scorers were less likely to accommodate their behaviour for their partner, and had less empathy and respect for their partner, for example.

High scorers were also more aggressive. In this experiment, students were asked to write a short essay, which was supposedly evaluated negatively or positively by another student. The feedback, which was the independent variable, was randomly given. Then the students played a competitive reaction time game with the supposed student who had given the feedback. The faster player to press a button could give a blast of unpleasant noise to the loser. The participants could set the level of the noise, and this was the measure of aggression (dependent variable). There was no competitor and the participants randomly won. Participants with high PES scores were significantly more aggressive than the low scorers after receiving negative evaluation, but there was no difference with the positive feedback.

1.9. APPENDIX 1D - EXPERIENCE SAMPLING

Experience sampling methodology (ESM) is "a method of data collection in which participants respond to repeated assessments at moments over the course of time

while functioning within their natural settings" (Scollon et al 2003 p5).

Three types of experience sampling can be distinguished (Scollon et al 2003):

- Interval-contingent sampling - set period of time (eg: hourly reports).
- Event-contingent sampling - after a particular event (eg: every social interaction).
- Signal-contingent sampling - random time signals. This technique avoids expectancy effects.

Table 1.2 presents the main strengths and weaknesses of signal-contingent sampling ESM.

Strengths

1. Used to understand behaviour in context, and "the intricacies of the interaction between persons and situations" (Scollon et al 2003).
2. High ecological validity.
3. Has the ability to study individuals as individuals (within-person analysis) and individuals as part of a sample (between-persons analysis) (Scollon et al 2003).
4. Less memory bias than retrospective studies.
5. Use of multiple measures - eg: collect data on thoughts and feelings, and environmental factors at same time.
6. Study behaviour as it happens rather in retrospect.

Weaknesses

1. Self-selection bias - ie: only individuals willing to endure, for example, 2-12 signals per day for 1-2 weeks participate. Also individuals who complete the study, even when it interferes with daily life (attrition rate). Scollon et al (2003) noted: "The most compliant participants for experience sampling studies will be conscientious, agreeable, non-depressed, young people who are not too busy - essentially, college students. Thus, researchers need to consider what effects, if any, these subject characteristics may have on the results of the study and the ability to generalise to broad populations" (p16).
2. The quality of the data can vary, including a decline over time as individuals become bored, for example, with completing the same questions. Also depends on the time lag between signal and response.
3. Response rate of volunteers varies - eg: less in evenings and at home, and in other situations like playing sport. Some individuals who cannot respond immediately (eg: lorry drivers, air traffic controllers), while older adults may have practical problems like hearing the signal or working the PDA (Scollon et al 2003).
4. Reactivity - individuals are aware that part of a study: "For example, completing mood measures 7 times a day might alert someone to insights such as, 'I am the kind of person who is sad a lot', or 'I am happy when I am with my friends'. Reflections of the latter

sort, in particular, may lead to behavioural changes such as spending more time with one's friends which in turn may change the person's moods" (Scollon et al 2003 p19).

5. Depends on the honesty of self-reports - "Social desirability, cognitive biases, and cultural norms might influence responses even at the momentary level of reporting. For example, if there is a cultural norm that feeling negative emotions is undesirable, there may be reluctance to reporting feelings such as sadness. Similarly, highly defensive people may 'filter' their responses, and even the most honest person might find it difficult to report on some states, such as unconscious motives or feelings" (Scollon et al 2003 p22).

6. A lot of data are collected and how to make sense of it - eg: mean of individual's scores, or between-person comparisons.

Table 1.2 - Strengths and weaknesses of signal-contingent ESM.

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2. RECOVERY FROM SEIZURES

Electroconvulsive therapy (ECT) is being replaced by magnetic seizure therapy (100Hz magnetic transcranial stimulation) for treatment-resistant major depression because there is a quicker recovery of orientation (eg: 7 minutes versus 26 minutes; Kirov et al 2008). Recovery of orientation is measured by correct answers to four of the following five items - name, date of birth, age, place, and day of the week.

Critics of the biological focus of psychiatry would say that though it is better for the patients that recovery time is shorter, this method does not move away from viewing depression as any illness like any physical one. Bracken (2001) commented about ECT, and it is relevant to magnetic seizure therapy: "If despair is nothing more than a disorder of the patient's neurotransmitters than doing something to his/her brain becomes a medical necessity and the central focus of the professionals involved. Recourse to ECT is the outcome of medical domination of mental health care. Challenging the use of ECT involves challenging this domination" (p28).

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