

PERSONALITY IMPLICATIONS OF ADAPTION-INNOVATION: VI. ADAPTION-INNOVATION AS A PREDICTOR OF DISEASE PRONENESS

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There is a substantial phenotypic similarity between (a) the cancer-prone personality and the adaptor, and (b) the coronary heart disease-prone individual and the innovator. We investigated the potential relationship between cognitive style and the occurrence of these diseases. A total of 75 undergraduate students completed the Kirton Adaption-Innovation Inventory (KAI; Kirton, 1976), a measure of cognitive style, and the Health Personality Test (HPT), a measure of proneness to cancer and coronary heart disease. The hypothesis that cancer proneness would be related to adaption and coronary heart disease proneness would be related to innovation was supported. This suggests that the KAI could potentially be used for the prospective identification of disease-susceptible individuals.

Keywords: disease proneness, coronary heart disease, cancer, cognitive style, adaption-innovation.

Health scientists have long searched for personality risk factors in the development of disease. Nearly two millennia ago, “Galen noted...that melancholic women were much more susceptible to cancer than other females” (Grossarth-Maticek et al., 2000, p. 34). Results of centuries of subsequent research indicate that the characteristics of the cancer-prone personality can

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now be confidently summarized as follows: unassertiveness, lack of personal drive, slow-paced demeanor, over-patience, avoidance of conflict, inability to deal with stress, and a tendency to suppress expression of emotion (Cooper & Faragher, 1991; Eysenck, 1989, 1991; Grossarth-Maticek, Eysenck, Pfeifer, Schmidt, & Koppel, 1997; Yousfi, Matthews, Amelang, & Schmidt-Rathjens, 2004). Coronary heart disease has also been linked to personality, not only in the Type A behavior pattern (i.e., anger, time urgency, competitiveness; Friedman & Rosenman, 1974), but also in striving (Keltikangas-Järvinen & Räikkönen, 1990), aggression (Wright, 1988), hostility (Smith, 1992), time urgency/impatience (Yan et al., 2003), and a tendency to create, rather than respond to, demands and challenges (Smith & Anderson, 1986).

There is an increasing body of evidence that cognitive style is central to the domain of personality (Goldsmith, 1989; Kirton, 2003). However, no researchers have yet examined whether or not differences in cognitive style contribute to disease risk. According to Kirton's (1976) adaption-innovation theory, cognitive style differences, which are normally distributed on a continuum in the general population, range from high adaption to high innovation. Adaptive individuals are typically characterized as sound, compliant, cautious, dependable, high in self-doubt, and having a preference for structure and rules. Innovative individuals are typically characterized as eschewing structure, and, notwithstanding their creativity and self-confidence, are often seen as controlling, insensitive, and impractical (Kirton, 1989).

Table 1. *Phenotypic Similarities in Adaption-Innovation and Disease Proneness*

Adaptors	Cancer-prone personality
Dependable, sound, predictable	Safe, over-patient, slow-paced demeanor
Compliant, conforming, wedded to system	Unassertive, lacking personal drive
Have difficulty with unexpected change	Unable to deal with stress effectively
Cautious	Avoid conflict, suppress negative emotion
High in self-doubt	Feel hopeless/helpless/depressed
Prefer rules, guidelines, structure	Enjoy singular tasks, excessively rational
Innovator	Coronary heart disease-prone personality
Abrasive, insensitive	Hostile, aggressive, angry
Impractical, risky, unsound	Striving, excessively competitive
Threaten the situation	Time urgent, impatient
Dislike structure	Tend to create demands and challenges
Prefer to do things differently, controlling	Self-centered

As shown in Table 1, there is a striking phenotypic similarity between the temperamental qualities of the cancer-prone personality and the adaptor, and also between the coronary heart disease-prone personality and the innovator.

Indeed, a number of the characteristics of the adaptor and innovator may be precursors of those of cancer-prone and coronary heart disease-prone individuals, respectively. In other words, the primary features of cancer-prone and coronary heart disease-prone persons could be regarded as psychologically deteriorated forms of some of the central traits of adaptors and innovators, respectively. Consequently, we hypothesized that the Kirton Adaption-Innovation Inventory (KAI; Kirton, 1976) will connect cancer proneness with adaption, and coronary heart disease proneness with innovation.

Method

Participants

A total of 42 men (M_{age} 20.0 years) and 126 women (M_{age} 20.1 years) at a large undergraduate liberal arts college completed informed consent forms prior to volunteering to participate in this study.

Materials and Procedure

In a group testing session, participants completed two questionnaires: the KAI and the Health Personality Test (HPT). The KAI is a 33-item self-report instrument that measures an individual's preferred approach to problem solving (Cronbach's $\alpha = .89$). Respondents were asked to rate the degree of difficulty they had applying the content of each item to themselves, for example, "How easy or difficult do you find it to present yourself, consistently, over a long period of time, as 'a person who would sooner create something than improve it', 'a person who never acts without proper authority', 'a person who likes to vary set routines at a moment's notice', 'a person who likes the protection of precise instructions'". Responses were scored on a 5-point scale, ranging from 1 = *very hard* to 5 = *very easy*. The KAI has a range of 32 (*extreme adaption*) to 160 (*extreme innovation*), with a theoretical mean of 96.

Grossarth-Maticek and Eysenck (1990) developed a questionnaire that assesses four health personality types, that is, cancer prone, coronary heart disease prone, healthy, and mixed (i.e., has characteristics of all three types). Because Amelang (1997) found no empirical support for the existence of the mixed type, it was not considered in this study. The HPT used here is a modified and abridged version of Grossarth-Maticek and Eysenck's questionnaire. It consists of 11 self-report items on which participants are asked to "indicate how closely the description in each question fits you by circling a number from 1 (*not at all*) to 10 (*very much*) that best describes you or your situation". The HPT yields three scores: cancer proneness, coronary heart disease proneness, and healthiness. The highest score identifies a respondent's dominant health personality type.

Results and Discussion

According to the HPT, approximately two-thirds of participants (51/75) fitted the healthy personality category ($M = 27.94$, $SD = 3.41$). More importantly, virtually one-third had unhealthy personalities. Specifically, 12 students had cancer-prone personalities ($M = 29.17$, $SD = 4.09$), and 12 had coronary heart disease-prone personalities ($M = 30.50$, $SD = 7.08$). The KAI results showed that cancer-prone students averaged 88.92 ($SD = 8.87$), compared to the mean of 98.67 ($SD = 9.49$) obtained for the coronary heart disease-prone group ($t(23) = 2.94$, $p < .05$).

The hypothesis that cancer-prone individuals would be adaptors and coronary heart disease-prone individuals would be innovators was supported. The KAI score for cancer-prone participants was significantly lower (i.e., consistent with greater adaption) than was the corresponding figure for the coronary heart disease-prone group (the score for which was modestly above the threshold of the innovator domain).

This study was limited by the size and homogeneity of the sample, and also by the predictable concern that the existence of disease-prone personalities may not explain occurrences of cancer and coronary heart disease any more readily than a number of more traditional variables such as neuroticism, jealousy, age, sleep, and stress induced through work overload (Amelang, 1997). Despite these drawbacks, Grossarth-Maticek and Eysenck's (1990) health personality categories clearly suggest a parsimonious and practical way of efficiently and rapidly identifying disease-prone individuals.

The discovery of a substrate of adaption in incipient cancer proneness, and innovation in future coronary heart disease, establishes the KAI as an instrument of considerable utility for the prospective identification of disease-prone individuals. Definitive evidence from longitudinal tracking of adaptors and innovators will determine whether they do in fact manifest a significant likelihood of developing cancer or coronary heart disease, respectively.

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