

## **METABEHAVIORS AS DISCRIMINATIVE STIMULI FOR PLANNED CULTURAL EVOLUTION**

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**ABSTRACT:** The analysis of cultural designs is a prerequisite to successful planned cultural evolution. Essential to this complex goal is the identification of appropriate dependent measures of aggregate population behavior (metabehaviors). Rate of change trends among metabehavioral indicators are suggested as measures of a culture's behavioral viability. Criticisms and advantages of such data are identified and discussed. It is argued that such measures are requisite to the evaluation of cultural baseline states and the effects of various cultural changes which may occur fortuitously or through planned change. Recent metabehavioral trends appear to reflect a decline in the viability of the United States.

### **Metabehaviors as Discriminative Stimuli for Planned Cultural Evolution**

Current efforts to analyze cultures are an important step in the direction of a technology of planned cultural evolution (Glenn, 1988; Harris, 1980; Lamal, 1991; & Lloyd, 1985). Yet, something essential to this enterprise is missing. According to Skinner (1971), "If there is any purpose or direction in the evolution of a culture, it has to do with bringing people under the control of more and more of the consequences of their behavior" (p. 144). But how can we accurately discern the consequences of cultural practices? First, we must clearly identify the culturally relevant behavioral components of prevailing metacontingencies. Glenn (1988) has defined the metacontingency as "the unit of analysis encompassing a cultural practice, in all its variations, and the aggregate outcome of all the current variations" (p. 168). A *Metabehavior* is an aggregate measure of a class of acts performed by individuals in a particular population. An example of a metabehavior would be the rate per 100,000 of all murders reported in the U. S. A. in a 1-year period. The plural form of this term, metabehaviors, is used to simultaneously refer to several classes of aggregate behavioral measures such as murder, rape, and teen pregnancy. Metabehaviors are embedded in cultural practices that both support the behaviors and mediate cultural viability.

It is insufficient to speculate about various designs which should comprise ideal cultures. To move beyond speculation to better designs and outcomes will require

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that metabehaviors become more *explicit* dependent variables in the analysis of cultural practice outcomes. The selection of various metabehavioral indicators and the meanings attached to changes in these measures will be a product of values.

A value may be defined as that which an individual or a group of individuals will work to achieve (c.f. Skinner, 1971, p. 105). An implicit value in planned cultural evolution is the survival of the culture. But the value of cultural survival must be made explicit and it must somehow become a superordinate value for members of the culture. The ameliorating, organizing, and motivating effects of identical superordinate goals (values) for conflicted subpopulations are well documented. For example, in the classic Robbers Cave experiment researchers produced acts of hostility between groups of male summer campers by structuring intergroup competition. They then introduced bogus emergencies which required intergroup cooperation to ameliorate (restore the water supply and repair the broken truck). The introduction of these superordinate goals led to a quick reduction in intergroup hostilities and an increase in friendly behavior (Sherif, Harvey, White, Hood, & Sherif, 1961). Cultural examples of this phenomenon include the cooperative behavior of previously conflicted populations during natural disasters or war conditions.

The selection of subordinate values which are consistent with the superordinate goal of a culture's survival has always been something of a "crap shoot". The analysis of cultural practices and metabehavioral outcomes may increase the odds of survival. The search for appropriate metabehavioral indicators of a culture's viability begins with a question which seems to have been asked by members of all cultures.

### Are Things Growing Steadily Worse?

B.F. Skinner (1971, p. 1) wrote of our world as one in which "things grow steadily worse." Many of the problems to which Skinner was referring were global in nature: pollution, overcrowding, resource depletion, and the increasing risks of a nuclear holocaust. He was also concerned about our own culture's problems such as the decline in effectiveness of our educational systems, the unskilled acculturation of our youth, and increasing rates of aggression and crime.

Within our own culture, the news media have increasingly reported escalating lawlessness, violence, drug addiction, and child abuse and neglect, to name several categories of problem behavior. Also, Opinions among the general public appear to support Skinner's "growing worse" hypothesis. One series of national public opinion surveys concluded:

Public evaluations of our condition as a nation display a downward drift from 1959 to 1971, with further decline since then. In addition, the past was evaluated above the present in each survey from 1971 to 1979. More recently (in 1974 and 1979) the future has been perceived as worse than the past. In summary, the country is perceived to be in a deteriorating condition, with dim prospect for a return to its former levels in the near future (Social Indicators, 1980, p. XXVIII)

Assessing and changing such alleged conditions requires that cultures be able to determine unequivocally if key metabehavioral measures are actually in an

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improving, a declining, or a steady state. Watson and Tharp (1981) asserted that the identification and measurement of target behaviors is a critical step which is most often overlooked in attempts at self-management. These observations and principles should also apply to the enterprise of cultural planning, which is the point of all that follows.

### Metabehavioral Measures Are Essential

In the United States and in other developed countries there is a long tradition of closely monitoring and widely reporting certain economic data to the general public. Quantitative economic data are systematically presented in daily news programs and newspapers. Short- and long-term trends within these data are reviewed, interpreted, and projected to assess the relative strength or weakness of the culture's economic performance. These economic indicators exert strong (though imperfect) stimulus control as experts provide economic advice regarding how to behave effectively. Projected outcomes lead to actions of individuals and governmental agencies designed to secure future economic reinforcers. Examples of these economic indicators are the Dow-Jones Average, the Gross Domestic Product, the trade imbalance, and the national debt (*Economic Indicators*, 1994). Unfortunately, there are no comparably organized and highly regarded public reports of other important non-economic metabehavioral measures.

Other sociocultural metabehavioral indicators must become as important to the governments and citizens of cultures as the previously mentioned economic indicators. Without these data, a culture cannot assess its own behavior and make adaptive corrections. Our government does collect and publish a wide range of social indicator data. But these data remain primarily in libraries and they are not systematically and regularly presented to the general public in the popular media. Perhaps sociocultural metabehaviors have not developed economic-like salience to citizens and politicians because they are related to determinants and consequences that are more remote, both spatially and temporally. Both individuals and the cultures they comprise should be more likely to engage in effective problem solving when salient stimuli are sharply clarified and conspicuously related to likely determinants and to immediate and deferred consequences.

### Criteria For Selecting Metabehavioral Indicators

Metabehaviors which bear most directly upon cultural survival must become powerful discriminative stimuli for citizens and policy-makers within cultures. This imperative raises questions about what categories of measures should be selected and also what forms these measures should take.

There are many existing sources of data on metabehaviors (e.g., Historical Statistics of the U. S., Social Indicators, Statistical Abstracts of the U. S.). The challenge is to select those categories that represent both reliable and valid measures of events strongly related to the viability of cultures. Although cultural analysis may someday discern the most effective measures, initial selections will be unavoidably value-laden. The guiding value in this selection process is the survival of the culture

under study. Metabehavioral choices are therefore informed by the principles of natural, behavioral, and cultural selection propounded by Charles Darwin, B. F. Skinner, Marvin Harris, and Sigrud Glenn. To survive, a culture must prepare and motivate large proportions of its citizens to maintain and build the culture.

To produce and maintain this culture-sustaining population:

1. Some number of children must be born, or perhaps imported, to sufficiently replenish the population of formerly effective citizens who become incapacitated and/or die.
2. The health of fetuses, infants and children must be protected and all prerequisites for normal growth and development in all essential areas (physical, moral, intellectual, vocational), must be assured.
3. Citizens of all ages must be protected from experiences which are conducive to the development of physical disease and maladaptive behavior [Maladaptive behavior has traditionally been labeled as pathological, personality disordered, abnormal, neurotic, psychotic, etc. The names may change but the contagious, self-defeating, and damaging behavior remains the same].
4. Planned evolution requires that a culture's members closely monitor certain metabehaviors and make appropriate metacontingency changes which relate in immediate, intermediate, and deferred ways to all of the imperatives listed above.

#### **What Forms Should These Measures of Metabehavioral Indicators Take?**

Skinner (1938) first identified powerful measures for a science of behavior analysis. He noted that too much detail in behavioral measures could obscure behavior patterns of relevance. Skinner provided four specific criteria for defining the measures: (a) that the behavior measured affect the external world; (b) that the unit of behavior be practical to isolate; (c) that the behavior be defined as a response class; and (d) that response rate should be used as the measure of the strength of the behavior under study (p. 58). Skinner further suggested that the cumulative record would be particularly useful for studying dynamic laws that affect behavior across time. These criteria can also be applied to molar measures of population behavior and then tested over time.

To these suggestions I would add that critical measures for cultural analysis should: (a) acquire face validity through their relevance to the survival of the culture; (b) reflect the best reliability attainable under prevailing conditions; (c) when possible, be presented in a format which informs the observer about the history of the strength of the behavior and allows for the prediction of future trends (i.e., the cumulative record); and (d) when possible, be controlled for population growth within the culture, or cultures, under study.

The following metabehavioral indicators are viewed as critical because of their powerful face valid and logical relationships to the aforementioned selection criteria. Future analyses may identify other critical indicators that should be added to, or supersede, these indicators.

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### A Sample of U.S. Critical Metabehavioral Indicators

Metabehavioral indicators will be presented in categories of logically related classes for the U.S.

#### Birth Rates And Age Demographics

Current and projected age demographics provide a gross estimate of human energy resources available to our society. Qualitative aspects of such measures (i.e., highly skilled behavioral repertoires vs. poor reading and math skills) may become more critical as a culture increases in technological complexity. The development of such quantitative-qualitative measures could benefit cultural planning and would represent an improvement over those which follow.

The birth rate per 1,000 of population for women between the ages of 15 and 44 years has decreased steadily with transient slight increases recorded in the 1950s and 1960s. Birth rates for women in this age range have declined from 55.2 per 1,000 of population in the year 1820 to 16.7 per 1,000 of population in 1990. The overall decline in birthrate for this age group is approximately 70% (U.S. Bureau of the Census [USBC], 1975, p. 49, Table B 5-10; 1992, p. 64, Table 80).

The following data represent the percent of change in proportions of the populations in three age groups from 1900 to 1987 and projections to the year 2010 using 1900 as the reference point. There was a 31.5% decrease in the infant to 24-year-old population between 1900 and 1987. By the year 2010, the proportion in this age group is expected to continue to decrease to approximately 42.6%. Between 1900 and 1987, there was a moderate increase in the proportion of the 25- to 64-year-old population (24.4%) and a very large increase in the proportion of 64 year and older population (200%). By the year 2010 these proportions are expected to continue to grow to 31.7% and 247.5%, respectively (USBC, 1975, p. 10, Table 29-42; USBC, 1989, p. 13, Table 13; USBC, 1990, p. 18, Table 22).

Steadily decreasing birthrates in combination with large increases within the proportion of the aged population (65 years and older) may present an increasingly threatening human energy resource problem. This projected human energy problem is one with which our culture may have to contend in order to remain viable.

#### Quality Of Infant And Child Environments

The following data represent births to unmarried women as a percent of births to all racial groups. The cumulative percent of births to unmarried women for all racial groups has increased by 409% between 1960 (5%) and 1989 (27%). Within this same interval, there were proportionate increases in births to unmarried white women of about 258% and to unmarried black women of about 1107% (USBC, 1980, p. 66, Table 95; 1992, p. 69, Table 89).

Socioeconomic changes within families can affect their ability to nurture and support the normal growth and development of their children. The economic status of children has suffered a substantial decline over the past decades. In 1990, births per 1,000 women were inversely related to income. At the extremes, women making

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under \$10,000 per year accounted for approximately 88 births per 1,000 women while women making \$50,000 and over per annum had about 56 births per 1,000 women (USBC, 1992, p. 70, Table 92). This relationship is reflective of general population trends which have been well documented during the last decade (USBC, 1981, 1985, 1989, 1992). These same resources document similar, but less consistent, inverse relationship trends between birth rates and years of education attained by mothers.

The number of divorced females per 1,000 married females with spouses present has increased dramatically. The estimations in 1960 were 78 per 1,000 among blacks and 38 per 1,000 among whites. By 1991, the data for divorced females per 1,000 married with spouse present were 370 for blacks and 159 for whites. These numbers represent a cumulative increase of 374% and 318% respectively (USBC, 1982-1983, p. 40, Table 51; 1987, p. 41, Table 52; 1992, p. 44, Table 50). Many divorced women with children have found it necessary to work to support themselves. However, married women with children and a husband present have also joined the work force at increasing rates. Among married women with children between the ages of six and 17 years, labor force participation increased from 28.3% in 1950 to 73.6% in 1991 for a cumulative increase of 160%. For the same period, labor force participation for married women with children under six years increased from 12% to 60%, a cumulative increase of 403% (Waldman, 1983; USBC, 1992, p. 388, Table 620).

During the past several decades, there have been strong increases in divorce rates, in children born to single and/or working parents, and children born into poverty. Birthrates continue to be substantially higher among the poor and the uneducated. These data suggest a steady deterioration in the quality of the environments into which this culture's children are born.

### **Maltreatment Of Children And The Behavioral Consequences**

Physical and emotional abuse of children yields expensive immediate and deferred consequences for society. The child maltreatment cases reported annually have increased from 101 per 10,000 children in 1976 to 328 per 10,000 children in 1986. The approximate increase in child maltreatment cases reported during this interval of ten years was 225% (USBC, 1992, p. 186, Table 301). Child sexual maltreatment cases reported from 1976 (3.2 per 10,000) to 1986 (15.7 per 10,000) increased by about 391% (USBC, 1992, p. 186, Table 301).

The frequency of annual outpatient additions (cases) for residential treatment centers for emotionally disturbed children have shown a major increase from 1969 (7,920) to 1988 (55,714), an increase of about 603% (National Institute of Mental Health [NIMH], 1992, p. 28, Table 1.6). The frequency of annual inpatient additions for emotionally disturbed children increased markedly from 1969 (7,596) to 1988 (23,441), an increase of approximately 208% (NIMH, 1992, p. 25, Table 1.3). It must be noted that patient additions could be counted more than once should a child be discharged and readmitted again. Also these data were not controlled for population growth. However, these numbers are suggestive of a growth in these treatment populations.

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The percent of children's cases disposed of by juvenile courts per 1,000 juveniles has also increased substantially. Children's cases disposed of by juvenile courts between 1940 (10.5 per 1,000) and 1989 (47.0 per 1,000) increased by 348% (USBC, 1975, p. 419, Table H 1119-1124; USBC, 1992, p. 196, Table 325).

The rate of these and other traumatic events experienced by children and adolescents have increased markedly over time as have the rates of their maladaptive behaviors.

### Criminal Behavior Of Adults

Adult criminal behavior can be viewed as both a result and a cause of biopsychosocial pathogenic circumstances. The rates for murder, forcible rape, robbery, and aggravated assault have all increased substantially. The combined violent crime rate for these categories per 100,000 of population was 117 in 1957. This rate had increased to 758 by 1991. The cumulative rate of combined violent crime increased by 548% during this interval (USBC, 1975, p. 413, Table H 925-961; USBC, 1993, p. 192, Table 300). Crime rates have increased in each of the four categories which have been combined.

Our culture is incarcerating its citizens at an increasing rate. The rate of incarceration of individuals in federal and state prisons was 118.6 per 100,000 of population in 1960. This rate climbed to 294.5 individuals per 100,000 by 1990. The increase for that interval was 147% (USBC, 1992, p. 197, Table 239).

Criminality measures represent deferred consequences of earlier life-span environmental events, similar to those documented within the preceding categories of metabehaviors. Incarceration measures represent both a loss of potentially productive individuals and a long-term drain upon a culture's resources. Criminality measures may be viewed as a useful "end state" assessment of whether a particular culture had structured good or bad social and economic metacontingencies decades earlier.

### Overview Of Critical Metabehavioral Indicators

The preceding categories of metabehavioral indicators are not exhaustive, nor are all of the possible indicators included within each category. However, these Metabehaviors are viewed as "critical" because they are thought to reflect changes in the rates of population behavior that can powerfully affect the viability of a culture. Beyond this basic assessment is the enormously complex matter of causal analysis. In cultural analysis, metabehaviors can function as both dependent and independent variables. For example, increases in rates sexual molestation or physical battering of children is both an effect of various environmental determinants and a cause of other events to come. An analysis of causal cycles resulting from metacontingency-metabehavioral interactions is a major challenge to the field of cultural analysis. The beginning of this vast undertaking will be enhanced by the selection of appropriate metabehaviors.

An overview of the previous metabehaviors suggests a generalized decline in the quality of children's developmental environments and a generalized increase in the

rate of maladaptive behavior within our population. There is sufficient research to support the assumption that these events are causally related to a variety of short- and long-term damaging outcomes in children and adults (Wenar, 1990; & Comer, 1995).

### Criticisms Of Metabehavioral Data

Scientists and intelligent nonscientists are able to identify a variety of criticisms of these actuarial data. They may argue that for various reasons the data are not reliable and valid indicators of anything. The following are some of the criticisms most often leveled at such metabehavioral data: (a) More agencies (mental health facilities, courts, jails, welfare agencies, etc.) have been, and will be, created to measure such problems. Therefore, more problems are measured; (b) In this modern time, our population is encouraged to be more open about their problems and to seek help in ways which inflate these report rates; (c) The data are meaningless because our definitions of various categories and methods of measurement change over time.

Clearly, these factors may account for some proportion of the large increases in some of the previous metabehaviors. To parcel out the separate and combined effects of these and other sources of error impacting the reliability and validity of current and future metabehavioral measures would be extremely complicated and time consuming; it may even be impossible. Of course, some measures are more accurate than others. For example, estimates of age demographics, employment, divorce, murder, and imprisonment should be more accurate than estimates of child abuse, rape, and suicide. Archer and Gartner (1984) addressed measures of violence and crime from a cross-national perspective. They found that cross-nationally the degree of under-reporting tends to be inversely related to the seriousness of the crime. They concluded that with the exception of rape, reasonably accurate records are kept of serious crimes. It was assumed that no index corresponded to actual events, but they suggested that even poor measures may serve as valid indicators of trends if they are related by some constant factor over time.

Unfortunately, these findings do not alleviate concerns about the validity of less serious criminal and noncriminal measures. Clearly, the metabehavioral measures reported here are more controversial than is preferred. Yet, we must contend with the fact that *all of the data* have shown very strong increasing trends. Actual cumulative records of nearly all metabehaviors reported have shown linear, if not exponential, curves of acceleration (these graphics are available from the author upon request).

A pragmatic view of these imperfect data underscores the potential for cataclysmic cultural consequences. Theoretically, exponentially accelerating rates of these metabehaviors may provide little time to make ameliorative cultural adjustments before the occurrence of what I will call *cultural decompensation*. Cultural decompensation can be defined as the loss of a culture's ability to maintain viability due to the effects of its own maladaptive practices and outcomes.



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### Conclusions

From a scientific perspective, it is most difficult to draw incontrovertible conclusions about a culture's metabeaviors and their relationship to the culture's viability. Although scientists may prefer a leisurely pace, the pragmatics of successful cultural evolution and survival may sometimes require that sensible conclusions be reached in the present, based upon the best information currently available. Therefore, it is provisionally concluded that the rates of change in critical metabeavioral indicators reported here, and elsewhere, reflect an increasing threat to the viability of this culture.

Psychologists and colleagues in related fields, such as sociology, anthropology, and demography, must now work together to create and refine metabeavioral indicators that strongly relate to cultural viability. Critical metabeavioral trends should be widely disseminated by the popular media with greater regularity and prominence. We must also simultaneously assemble a behavioral technology to increase the stimulus control of these metabeaviors among the citizens and governments of cultures. Such cultural analytic technology is prerequisite to the possibility of successful planned cultural evolution. The supreme long-term challenge will be the creation of a cross-cultural menu of prevailing cultural conditions, metacontingencies, and correlated metabeavioral outcomes that may assist planners to increase their culture's viability. With regard to our own culture, we must work swiftly. Critical metabeavioral indicators, imperfect though they may be, strongly suggest that time is not on our side.

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