Motivation and Cognition - Individual Bases

Three Images of Individual Learning

In this section, I will review three images which organize different bodies of research about processes of individual learning. The first image is that people never learn or change very much. The second image is that people are psychologically embedded within their immediate context and learn passively and reactively in response to reward and punishment. The third image is that people in Washington are active learners, striving continually to clarify, organize, gain perspective on, and solve the problems they confront. Following this overview I will turn to a review of several selected issues.

I. Fixed Behavior and Thought Patterns

The first view of individual learning is that human beings are fixed, either at conception by genetic determinants or by early childhood experience. As adults, people do not change very much, they are creatures of habit, terrible reality testers, basically inflexible. If their genetic endowments and early emotional patterning fit later requirements or opportunities in the world they encounter as adults, they have productive, successful lives. But if there is a mismatch, or if they confront changing worlds, they seldom adapt successfully; they become unhappy and demoralized, feel lost, their competence slips relative to the new tasks they confront, and in the extreme they have nervous breakdowns. At best, they only learn better rationalizations to excuse their failures.

Fixed Emotional Drives. A classic view, still very much alive, holds that, fundamentally, inherited emotional drives and instincts produce human behavior. From this point of view, one never needs to postulate very much intelligent behavior to understand the unchanging story of political life. Nothing about politics or the follies of humanity has changed from the beginning of time; people have more technology today, but, from culture to culture,

from primitive tribes to modern societies, across historical epochs, the story of politics is the same - people seek and do the same things, face the same issues, repeat the same dismal idiocies, and they always will.

One example of an instinct explanation of politics is Freud s theory of aggressive drives, for which he claimed support from study of his patients: everyone is seeking to dominate and run the lives of everyone else (Freud, 1933/ 1973; Nelson, 1974). This drive could be as obvious as warfare or as sublimated as philosophy or social science, but the ultimate goal is to be above others, control their lives, destroy their independence.

By this theory we would expect the main story of politics in Washington to be empire building; regardless of intellectual facade and rationalization, everyone will be trying for more power, more money. Washington bureaucrats will try to expand the federal government into every nook and cranny of American life - and American power into every nook and cranny of the world - unless checked by budget or legal limits or by countervailing forces. At the margin, they will perhaps learn modestly about strategy and tactics for accomplishing this successfully. But, as for the main story of Washington s war against all, intelligence will have as little autonomous or fundamental a role as it does in the primitive tropisms of the amoeba that expands to engulf whatever food is in its vicinity.

In recent years, work in sociobiology has proposed an entirely different theory of basic human motivation, still allegedly determined by innate animal nature - the preponderance of altruistic motivation, of self-sacrifice and dedication for the good of the whole (D. T Campbell, 1978; E. O. Wilson, 1975; Wispé, 1978). By one interpretation of this image, the major story of politics in Washington will not be clashes of egotistical greed, vanity, and selfishness, but rather cooperation or conflict generated by deeply felt, albeit different, visions of collective ideals to be achieved. People will not necessarily be intelligent in what they do, but their hearts are in the right place, and if you can show them better ways they may try to learn them, although perhaps what they will not accept are limits of power, a

wisdom sometimes to leave well enough alone.

Limited and Fixed Abilities and Intelligence. A second body of literature implying that fixed elements of human nature are central to behavior raises the possibility that different people are naturally good, and not good, at different things. Moreover, there will be strict upper limits, determined by natural endowments, to how well a person can learn (Block & Dworkin, 1976). To the extent that these theories of a fixed genetic base are true, we should not expect much qualitative increase in government performance; indeed human beings might not even be bright enough, as Camus and Herbert Simon have argued (March, 1978), to become rational. There may be room for marginal improvement by better matching of people to jobs, better coordination, and so forth (French, 1974; Pervin, 1968), but we are stuck with each other pretty much as we are, according to this theory.

Fixed Personality Structure and Dynamics. The major body of theory maintaining early personality crystallization is Freud s psychoanalytic perspective. Freud felt that human nature was implicit in the behavior of babies and young children: a primacy of strong emotions ranging from angelic joy and bliss to dark rage; selfishness; biting; playing with imaginary companions; irrationality; instinctive reactions and the absence of any tendency to think. People have to be molded, through both love and discipline, not to be childish (although, in Freud s view, adult childishness is never deeply transformed but merely goes underground where it continues as the deep structure beneath the rationalized surface forms).

In Freud s psychoanalytic theory, the main emphasis is on the *id* and its fate. The id is the deep source of energy, passions, fears, and both irrationality and (when accessible under conscious control in rare individuals) creativity. But individuals exhibit *libidinal inertia,* maintaining the forms and channels of their energies in their behavior and in their emotionally expressive thought; that is, they do not like to change, preferring even to court disaster or retain only marginal competence with the comfortable old ways, a conservatism

of perpetual repetition compulsions (Freud, 1920/1973).

Let me extract from Freud some further predictions, beyond his libidinal inertia hypothesis of perpetual repetition compulsions.

Freud claimed that his investigations demonstrated, beneath a veneer of civilization, the *primacy of selfishness and greed* in human behavior. Indeed, in his later years he dismissed the injunction to love one s neighbor as oneself on the ground that it showed Pollyannish naiveté about human nature; most people, Freud said, were too low quality, unworthy of being loved (Freud, 1930/ 1973).

If Freud is right about this, one prediction is that there should be few genuinely warm, generous, and altruistic people in the executive branch, few will be found striving with all their energy to learn to make a better world as an expression of a deep love and compassion for the rest of us. Rather, their main preoccupations will be the same old habits (libidinal inertia) of acquiring power, status, money, and the sexual prerogatives and charismatic sexual attraction some psychoanalysts hypothesize people associate with career success and high political office. People in Washington will be found to care about themselves and their careers, but not much about the issues.

It is this view of human nature in American government institutions which is, for example, advanced by David Mayhew (1974) in his research on Congress. Selfishness, greed, egotism, and self-interested shrewdness are, he thinks, the rule: there are few saints. Vaillant (1977) also seems to hold this view of American life in his study of the careers of men from the Harvard Class of 1937, many of whom attained (and still hold) high offices in American government and society; few, he says, can be classified as altruistic.

A corollary of the theory of the primacy of self-interest is *opportunism* and intellectual

superficiality. That is, while their deeper ambition remains unchanged, people will be as intellectually opportunistic and changeable as chameleons. If program evaluation studies win points, there will be endorsement of program evaluation studies, at least by younger people aspiring to high office. If one is in an agency (e.g., HEW [now HHS - ed.]) in which social activism is *de rigueur*, then one will become an activist. But, just as attitude theorists tell us there is only a modest component of careful independent thought and systematic analysis behind what most people believe and say (Abelson, Aronson, McGuire, Newcomb, Rosenberg, & Tannenbaum, 1968; Kiesler, Collins, & Miller, 1969; Lane, 1969; Smith, 1968), so there will be little depth and self-reflection behind all the talk and surface sophistication in Washington.

A second corollary of Freud s view of selfish preoccupations is that people in Washington will have remarkably little curiosity about the world. People may advocate program evaluation or more research (if that is a way to achieve advancement within Washington), hut even the research programs actually started by the government will not flow primarily from a deep curiosity or drive to know about people and the world.

To take another view, research in psychology analyzing the relation of personality to belief systems (e.g., Elms, 1976; Etheredge, 1978; Lane, 1969; Lasswell, 1930; Stone, 1974; Warr, 1970) shows both policy attitudes and beliefs about the nature of other people to be partly an expression of *emotional predisposition.* Apparently people often rely on an intuitive feel about the way the world works and they use the strength of this subjective feeling to calibrate whether they are right. The result, this research tradition would predict (and often shows), is that people in Washington (and many other places) underexperience and badly miscalculate the true level of their ignorance and display bold, macho, authoritative styles exceeding that to which they would be entitled based on a true understanding of the world (although, of course, the stylistic requirements of politics and public leadership may require, and train people to, a bold self-presentation; see Geertz, 1964).

Direct documentation of this naturally occurring overconfidence in Washington has recently become available, and it apparently flows from personal emotional dynamics (Etheredge, 1978), from common cognitive mechanisms, and from socialization patterns. To take an example, the CIA has developed a test in which its political analysts answer simple questions whose answers they may not know with complete confidence (e.g., Do herpetologists study snakes or viruses? Which is larger, Australia or Greenland?); they also estimate their subjective confidence in their answers. Data volunteered from several hundred professional political analysts show that almost all systematically and massively overestimate their true degree of knowledge - when the typical intelligence community political analyst gives a 90% confident rating, the actual hit rate is only slightly above chance. Curiously, some groups (e.g., professional meteorologists) are quite accurate in estimating the confidence of their knowledge of these items (Cambridge & Shreckengost, 1978). This boldness shift phenomenon, appearing in factual tests without political content, argues against Allison s (1971, p. 178) more reassuring *51 -49* explanation of overconfidence (that people in Washington know their level of ignorance but, once the balance of argument has tilted, argue boldly in public as a tactic). (See also Einhorn & Hogarth, 1978, Janis & Mann, 1977, Jervis, 1976, and Ross, 1977, for further discussion of overconfidence processes.)

General Observations. Let me make several additional observations by way of guidance to literature relevant to this first model. First, so far as genetic bases of drives or aptitudes arc concerned, no one has yet isolated the genes allegedly involved. Until that happens, the more empirical members of the scientific community will probably remain skeptical. Still, there is a large body of evidence from animal studies for possible major genetic effects; for example, different breeds of dogs differ substantially in temperament (either nervous and yippy or soporific), intelligence, social responsiveness, and acquisition of self-restraint (Freedman, 1958). It is quite widely accepted, on the basis of studies with twins and other methods, that there is a genetic component to IQ (Block & Dworkin, 1976) and a genetic predisposition to schizophrenia. J. A. Gray (1973, 1975) has argued for a genetic predispo-

sition to neurosis and for (among others) a greater genetic role in the sensitivity of some people s feelings (nervous systems) to criticism, a susceptibility which could produce conflict, inhibition, and withdrawal in a pluralist society where any feeling or behavior can be imagined as potentially criticizable by someone. A corollary (assuming political success often comes from boldness and perseverance) is that people whose behavior tends not to be extinguished by criticism because their nervous systems make them less reactive to it may have a genetically based advantage in politics. Eaves and Eysenck (1974) have published suggestive evidence of a genetic predisposition to conservative preferences among people whose nervous system structure makes novel stimulation unpleasant.

Efforts to test Freud s various theories rigorously have yielded very mixed results, suggesting (albeit with many measurement problems) that his specific hypotheses are, at best, true only to some degree and only of some people (i.e., the theories are better than random) but are not true of everyone or complete (Fisher & Greenberg, 1977a). A major failure has been the inability to make broad, reliable predictions of adult personality (measured, however, only by overt behavior) from early childhood behavior or from allegedly key psychosexual traumas, although the absence of a mother or a substitute special relationship with a caretaker in early infancy has serious long-term effects (Hunt, 1979). There may, however, be continuities of subjective outlook that might be traced, in complex ways that differ for different people, to early childhood.

Adult personality studies suggest that, rather than strict continuity, people probably do change in some ways as they grow older, becoming (from the late teenage years through their sixties) more emotionally stable, less prone to feel guilty, insecure, or threatened, and gaining greater ego strength (Buss & Poley, 1976, pp. 142 - 146); their concerns sometimes also change (e.g., toward generativity) (D. Levinson, Darrow, Klein, Levinson, & McKee 1978). Test results suggesting broad declines in intellectual ability after middle age now seem to have been premature and to have partly reflected a decrease in physical energy, speed, and perhaps lack of interest in restructuring, rather than in ability *per se.* But with

increasing age, there is some evidence for fading of long-term memory abilities and an apparent decline in giving full attention (at least to psychologists giving tests). With the raising of the federal retirement age to 70, such changes may have increased significance (Carroll & Maxwell, 1979),

It also seems clear that there are some issues which many adults outgrow, or at least rarely rethink in fundamental ways. Argyle (1964) reports, for example, that there is a sharp rise in concern for such questions as the existence of God during teenage years but that after their early 20s, few people seem to worry about the problem, apparently either having resolved it and put it behind them or lost interest. Etheredge (1978) reports indirect evidence that, among foreign-service officers, tendencies to advocate or oppose the use of force consistently reflected personality predispositions in scenarios spanning at least a decade; earlier experience did not call into question the basic personal predispositions to advocate or oppose the use of military force.

In sum, then, there is little direct data for or against most of these hypotheses as far as adults in Washington are concerned. But it is probable that there are significant genetic predispositions, overconfident miscalibration of ignorance levels, and some personality-based predispositions not usually subject to rethinking.

II. Passive Reactive Models of Human Learning

Social-learning theory, in advancing an essentially passive, reactive image of learning processes, specifies five characteristics of learning: (1) *sensationism,* the belief that people derive knowledge solely from experience; (2) *reductionism,* the belief that all complex ideas are built from basic, simple ideas; (3) *reactive mechanism,* the belief that the mind has no mysteries and operates in reaction to environmental stimuli with passive copying using simple additive rules; (4) *associationism,* the belief that learning occurs through linkages

formed between ideas that reflect their contiguity in experience; and (5) ***hedonism,*** the belief that people s sole motivation is to obtain pleasure and avoid pain.

The operating mechanism here, the so-called law of association (4), has been claimed as the basis of learning for centuries, most notably by such British philosophers as Thomas Hobbes, John Locke, David Hume, James Mill, and John Stuart Mill. The theoretical apparatus of this social-learning theory has been impressively developed by such researchers as Thorndike, Pavlov, Guthrie, Tolman, Hull, Skinner, and Bandura.

This is not the place for a detailed discussion of social-learning theory, which has become extraordinarily complex since such classic experiments as Pavlov conditioning his dogs. In Albert Bandura s (1977a, 1977b) formulation, the theory now aspires to a broad, differentiated, and unified account of behavior with sophisticated attention to such issues as attentional processes, retention processes, motor reproduction processes, motivational processes (vicarious reinforcements and self-reinforcements in addition to external reinforcements), and cognitive controls. Here, however, I will abstract some key mechanisms and predictions of social learning - and other passive and reactive approaches - to illustrate both the plausibility and the potential value to be gleaned from these traditions.

The Theory of Context Embeddedness. A hypothesis common to many theorists - beginning at least with Plato s allegory of humans as cave dwellers in *The Republic* - is that most people are subjectively embedded within, and hence do not experience with perspective, the immediate context of the conventional rewards, punishments, roles, and aspirations of their society. They are dependent variables of their time and place, endogenous to the system. One way to formulate this theory, and test it, is to express it as a hypothesis about spatial imagery encoding. For example, do people experience American government as a powerful presence above their sense of themselves? Does a 6 3 bureaucrat imaginatively encode a 5 9 Jimmy Carter or department secretary as taller than, above, his sense of himself? (This is context-embedded metaphysics, not physics.) Are goals (such as getting more money or

some different job) experienced secularly and realistically, or are they primarily encoded magically and imaginatively as self-charismatic moves upward ?

The current state of imagery-encoding theory as an approach to socialization and internalized power relationships in American life postulates nine alternative relations between the self and superior images (i.e., those images encoded as above the sense of the self), varying by the degree and quality of animistic power embedded within the higher image (hostile, benevolent, or neutral) and the degree and mode of control of the self for protection from potential hostility or to secure potential indulgence. The important point, for present purposes, is that some people apparently do not imaginatively encode political and social realities in this hierarchical way and appear to be more autonomous, more mature and subjectively grown-up (literally, i.e., without a sense of subjective subordination), to think with more perspective and freedom from stimulus - response embeddedness (Etheredge, 1979a, 1979c).

Will This Be on an Exam? Social-learning theory tells us that people learn what will bring them rewards or will avoid punishment. Thus, a familiar will this be on an exam? psychology may be central in Washington - if the boss, or Congress, or the president wants people in bureaucracies to learn x, and holds them accountable, they will be more likely to learn it. And, if the incentive systems (Clark & Wilson, 1961) are hostile to learning about x, it probably will not happen. This is *not* to say, however, that simply saying, we think you should learn *x* will accomplish the goal, just as my putting a book on a list of assigned or recommended reading scarcely guarantees that it will be read or thoughtfully considered by students; bureaucrats (and departmental Secretaries) have to know that, for example, they will be in serious trouble with the Congress at the next appropriations hearings if they have not done good evaluation studies. And they probably need to know that the work will be evaluated by tough standards (see Aberbach, 1979, on congressional oversight trends).

The Necessity for Leadership. Social-learning theorists hold that people are solely reactive.

Freud also thought most people he observed were dependent: Only very few civilized people are capable . . . of coming to an independent opinion. You cannot exaggerate the intensity of people s inner lack of resolution and craving for authority (Freud, 19 10/ 1973, p. 146).

If left alone, many people will just sit, anomie and unhappy. They do not have an inner sense of direction. They need leadership to create a context of carrots and sticks, an agenda of problems to solve or goals to be achieved (Selznick, 1957). Those incentive systems and contexts for action need not be based on monetary incentives; in fact, ideals may often be more effective as the person is continually self-motivated by the sense of the wonderfully rewarding experience when the ideal is achieved.

Imitation of High-Status People. The belief that people tend to fixate on and imitate others of high status is an old one; the classic belief of aristocrats that they set the standards for the rest of society does appear, on the basis of research evidence, to he more than just a self-absorbed delusion of aristocrats themselves (Rosenthal & Zimmerman, 1978). Thus, we would expect to find that one of the major determinants of learning will be not the explicit reward structures of a bureaucracy, but the personal example and tone set by the top people. If they are dedicated, hard-working, and care about the issues, everyone else will learn. If they are selfish and just in it for the money or to have their ticket punched for a better job when they return to the private sector, their subordinates will go through the motions cynically and without enthusiasm (Fallows, 1979a, l979b). Organizational psychologists have yet to give major attention to this theory.

Avoiding Unpleasantness. There seems to be a tendency for potential pain and unpleasantness to loom larger and more vividly in the imagination than potential rewards. Social-learning theorists say the avoidance gradients of human beings are often steeper than approach gradients. Economists say most people are risk aversive. Possibly there is an inherited survival instinct at work: the mind is programmed so that the sight of a beautiful

wildflower close at hand is less instantly arousing and motivating than the sound, three hills away, that might be a tiger.

Many observed dysfunctions of bureaucracy, including problems of organizational nonlearning, may follow from this apparent fact that it is easier to scare people than to reassure them (Kline, 1977, p. 77), that the human nervous system is calibrated to react more vividly to potential pain than to potential reward. For example, Argyris and Schon s (1978) work on pathologies of organizational learning can be interpreted to reflect this basic mechanism - most people nervously avoid telling unpleasant truths to superiors, they self-protectively distort upward communication, and they prefer to avoid unpleasant confrontations and troubling issues. Research may show the imagination of many people in bureaucracies to be more actively fixated on all the tigers that might get them if they are not careful or make the wrong move than it is on what might be gained through boldness and forthrightness.

Two corollaries follow from this theory:

First, we can conceive, in principle, that people would be absolutely fascinated by the unknown, even have to be held back in their eagerness to rush off and explore it - that they might be adventuresome, experimental, inquisitive, excited about the potential for adventure, new competencies, new rewards, new discoveries. But, in fact, this may not be basically true of life in Washington. On the contrary, out of a *fear of the unknown and of change,* people may more typically prefer the safety of routine and worry more about being hurt than expect to be pleasantly surprised.

The second corollary is that people in Washington either will be slow to notice or *will not learn unpleasant truths* (see Erdelyi, 1974; MeGuire, 1968). Such a proposition sets the mind in motion: What might these unpleasant, unsettling truths be? HEW [HHS - ed.] liberals may continually overestimate government capacity to regulate many facets of

American life wisely. The Nuclear Regulatory Commission may not learn that there are unsolvable problems with safe storage of nuclear wastes. Conservatives may not learn about or fully appreciate the extent of suffering that continues because of the absence of new government programs. Presidents may not learn that their instincts and interpersonal styles are sometimes inappropriate guides in foreign-policy decisions. The list could go on. A related prediction is that such blockages will follow from a personal-taste criterion for truth: if an idea makes me feel uncomfortable, it is wrong.

Cross Reward System Interference. It is a key assumption of social-learning theory (and many other theories in psychology) that what appears to be unintelligent or dysfunctional behavior from one point of view is always quite intelligent from another, just as psychoanalytic theory also postulates that a symptom or problem at one level is always an attempted (albeit implicit) solution to another problem at a deeper level. In a pluralist, nontotalitarian society, the multiple incentive systems of life can similarly interfere with each other so that official rewards are not the most salient. For example, most administrations probably receive more highly salient rewards (e.g., election victories) from good press relations than from time spent designing intelligent, long-range learning programs that will pay off far in the future. And most cabinet officers are probably more immediately rewarded (and avoid more grief) by behaving reactively to what the president and their interest group and congressional constituencies want than by becoming specialists on substantive issues and trying to convince these constituents what they should want. So presidents will learn primarily to spend resources on press relations and cabinet secretaries on placating their constituencies.

Probably the most important set of alternative reward systems relevant to learning in Washington are those of private life. Many people might find that they prefer time with their wives, children, and friends or working in a garden to taking home briefcases at night, working on weekends, and expending the energy (and encountering the frustrations) necessary to do their jobs beyond a routinely acceptable level. The evidence is sparse, but it

appears one likely determinant of whether rewards are sought mainly from jobs or from private life might he early career experience, especially a good relationship with a mentor in the late 20s or early 30s (Levinson et al., 1978).

General Observations. Let me add several general observations by way of guidance to the literature. There is something to be said for the conditioning approach to learning, perhaps much, but it must he said carefully. First, there is no strong evidence supporting the old theories of simple, direct. automatic conditioning processes in adults, at least not without very inventive and complex *post hoc* explanation. This is not to say that humans are unaffected by reward and punishment contingencies, but it is to say that experiments of direct stimulus-response conditioning of the nervous system, especially after about age 5 and even in the simplest eyeblink conditioning and finger withdrawal experiments. produce results whose deviations from predictions are best accounted for by assuming that higher cognitive controls can readily supervene. (For example, if you condition eyeblink responses with a buzzer followed by the flash of a bright light, the extinction of eyeblink reflex following the buzzer sound [i.e., when it is no longer followed by the flash] stops almost immediately if you simply tell people when you have disconnected the light; and such extinction via cognitive controls occurs more rapidly than extinction based on the experience of multiple runs without a light flash, Brewer, 1974.) Moreover even simple behavior in simple animals reveals complex genetic bases and environmental and genetic interactions - for example, a review of current mouse attack theory concludes: strain and species differences also abound making it next to impossible to integrate experiments using different strains and species (Powell & Buchanan, 1978, p. 703). Few psychologists today believe that general variations in single reinforcement schedules in the classroom or on the job can have *automatic* major effects on behavior (Estes, 1970, p. 87; Locke, 1977). For example, real income of government employees has more than doubled since WWII, but no one contends that the amount of physical or mental energy called forth (or the commitment to work) has similarly increased. One likely explanation is that, as economists would predict, there is diminishing marginal utility to income, and thus to income as a reinforcer,

an explanation paralleling Helson s theory (1959; see also Appley, 1971) of an adaptation level to reinforcers and akin also to Maslow s (1954) notion that lower motivations (like earning money to ensure survival) fall off and are replaced by higher motives (like finding challenging work) when lower need satisfaction is taken for granted.

While not assuming direct and invariant nervous system conditioning, a model of rational response to reward-punishment contexts has been the major one in industrial and organizational psychology. This expectancy-instrumentality-valance tradition analyzes work effort (not necessarily learning) as a function of the expectation that effort will lead to task accomplishment, the instrumentality of task accomplishment for attaining or avoiding task contingent outcomes, and the valance or attractiveness of the outcomes. However, about 35 published studies show that the model so far explains only, at best, 10% of the variance in both field and laboratory experiments, and more often about 6% (J. P. Campbell & Pritchard, 1976, pp. 9 1-92). But let me offer four observations. First, this theory may work best only to explain major differences, whereas the present range of subject variation has been limited - usually subjects are those currently employed, and thus performing within satisfactory bounds - and the range of tasks has also been limited. Adding a large number of impossible tasks or tasks with painful consequences would undoubtedly raise R^2 for this theory, although without being much help for explaining variations in normal job behavior. Second, effort spent on a task is probably more a function of the time and effort necessary to do the task to acceptable standards (Steinbruner, 1974) and is not necessarily correlated with expected outcomes - a $100 million decision might be made in 5 minutes, but a complex or controversial $10 million decision might take much longer. Third, the time and energy available may be relatively fixed so that, especially at top levels, the (originally piecework) industrial-psychology theory that a man will work a lot harder if more highly motivated may not apply at these upper bounds. Fourth, tough-minded, systematic, rational planning about jobs and work may be an individual difference variable: Etheredge (1978) found that while a majority of military officers reported long-range rational calculation in their careers, a majority of civilian analysts at the Office of Manage-

ment and Budget reported a tendency to muddle through and to satisfice - to find a job that looked interesting and work at that. (A discussion of other problems with VIE theory, including poor agreement among effort measures, may be found in J. P. Campbell & Pritchard .)

The theory that most people already know exactly what they want in life and rationally and consistently apportion their energies to do what is necessary to get it seems not to work very well (see Ajien & Fishbein, 1977, for a related review). There may be some personality basis involved in learning - perhaps some people have more energy and by nature are workaholics, or are good at learning and thus feel satisfaction from it, or (as in McClelland s theory) are driven by high need to achieve or fear of failure (J. P. Campbell & Pritchard, 1976). Medawar (1979, p. 45) proposes that there is an obsessional single-mindedness required by almost any human endeavor that is to be well done. Although research on the effect of personality and motivational predisposition in school achievement typically gives low correlations for any one trait (Entwistle, 1972), the mean level of boredom in public schools is probably fairly high; personal factors may be highly predictive in situations where there is a special fit between a person and a personally engaging learning agenda.

One of the major debates in psychology over the past decade has been whether differences between individuals in fixed personality traits explain most of the variation in behavior across situations. The present conclusion is that they do not - both sociology (situational characteristics) and social psychology (complex interactions of predisposition and situation) usually explain more (Bowers, 1973; Magnusson & Endler, 1977; Pervin, 1968; Sarason, Smith, & Diener, 1975). Of the several approaches to emphasize social induction of motivation, one is Ralph Linton s theory of boredom avoidance: it seems possible that the human capacity for being bored, rather than man s social or natural needs, lies at the roots of man s cultural advance and Bertrand Russell s assertion that at least half the sins of mankind are caused by fears of boredom (cited by Gannett, 1979, pp. 1 -

2). That is, people hate it when nothing is happening and might be easily induced to work on a wide variety of problems that are intrinsically interesting (Deci, 1975) or challenge their abilities and offer increased competence (De Charms, 1968) and may unconsciously create foul-ups if there is nothing else interesting to do. Goal-setting theory is in this tradition, and the evidence is that the higher the goal that is set, the higher the performance, assuming the goal is accepted (Mitchell, 1979, pp. 255 - 258; see also Kerr & Jermier, 1978). A high level of aspiration of the work group also seems to increase individual effort (Hare, 1976; Starbuck, 1963). A related idea (discussed earlier) is Selznick's (1957) theory that effective leaders motivate workers by articulating a conceptual canopy which integrates their particular task within a vision of the ultimate importance of the work (e.g., "You may be a file clerk, but what you're really doing is helping to win the war"). Other vocabulary terms to emphasize the cognitive context that makes work meaningful have been Minsky's "frame" (1975), Goffman's (1974) use of the same term, and Kuhn's (1970) theory of a paradigm which gives assurance of contributing to worthwhile progress; the traditional terms have been "myth" (Murray, 1968; Nimmo, 1974), "legitimation system" (Berger & Luckmann, 1967), and "definition of the situation" (Ball, 1972).

These theories all suggest that meaningful work on worthwhile problems (Klinger, 1977) is partly a social construction (Berger & Luckmann, 1967; Kaufman, 1960). The opportunity to make progress on such problems does seem to capture the imagination and to be highly motivating (among groups that seem highly motivated these days are people working on energy problems, biologists getting started on recombinant DNA research, people at the Center for Disease Control working on worldwide inoculation programs with technology they know can dramatically increase world public health, and so forth.) These theories suggest further (excuse the lack of cynicism) that many people hate to be selfish and that altruism, an understanding of their work as having a positive impact on other people, will call forth a commitment. Altruism theories have not been tested in business settings and are complex, but one ingredient seems to be a sense of personal responsibility and a belief that the individual can make a recognized contribution that is unique and

hence will not be achieved if he is uninvolved (Wispé, 1978). The feeling of doing socially recognized work that is needed and has a positive impact on other people has been reported as a major predictor of physical health (Palmore, 1969).

III. Active Learning - Developmental Theories

Developmental theorists sometimes agree that learning theories based on either fixed behavior or conditioning can be useful to understand some people at lower levels of development. But they see people as fundamentally seeking, and often achieving, further qualitative personal growth or development, the achievement of which is partly facilitated or blocked by their environment. This developmental, so-called rationalist, tradition holds an active, constructionist view of learning, believes there are innate capacities and predispositions of the mind to make independent sense out of the world, capacities for active internal processing, self-reflection, and qualitative transformation of understanding and competence independent of external hedonistic incentive systems. The tradition of rationalist philosophers (e.g., Descartes, Leibniz, Kant) has continued in the diverse work of such theorists as Piaget, Werner, amid Chomsky, within formally designated learning-theory literature, and in such affective-cognitive research as the ego and moral development research of Loevinger and Kohlberg, recent work in psychoanalytic theory (Erikson, 1959; Gedo, 1979; Gedo & Goldberg, 1973; Kohut, 1971, 1977; Levinson *et al.*, 1978), the humanistic growth psychologies of Carl Rogers and Abraham Maslow, and the cognitive development work of the Harvey group (Miller, 1978).

I will summarize briefly key elements in the theories of Werner, Maslow, Loevinger, and Elliott Jaques, a psychoanalyst associated with the Tavistock Institute who has worked in field settings specifically to develop an understanding of personal growth and bureaucracy.

- Heinz Werner s model (Werner, l948; Werner & Kaplan, 1963; see also Langer, 1970) has been described briefly above: increased differentiation by the knower both within the objects of knowledge and in the sensitivity and perspective on the symbols and models used as tools to construct and think about the self and the world; instead of only confusion and complexity, there is eventually a movement toward coherence using hierarchical levels of integration. There is also greater perspective and psychological distance, a differentiation of the self from its objects of knowledge, and hence, greater autonomy and capability for rationality:

> *Increasing subject-object differentiation involves the corollary that the organism becomes increasingly less dominated by the immediate concrete situation; the person is less stimulus bound and less impelled by his own affective states. A consequence of this freedom is the clearer understanding of goals, the possibility of employing substitutive means and alternative ends. There is, hence, a greater capacity for delay and planned action. . . In short, he can manipulate the environment rather than respond passively to the environment.* (Werner, 1957, p. 127)

Although there may be some transfer of developmental stages, there need not be similar levels in all systems of thought and action within an individual: a brilliant mathematician may be totally bewildered and confused about processes of economic development in the Third World without a period of separate study.

- Abraham Maslow s (1954) theory of motivation imagines people to have a series of preoccupations, pursuing the satisfaction of lower needs (e.g., security, safety), until these are satisfied, then becoming concerned about other needs and deficiencies (esteem and respect, affection), and finally, if deficiencies are met, being motivated to develop and express all of his or her latent talents and higher capacities (self-actualization, needs for beauty, truth, etc.). One useful example might be to think of the theory as applied to the typical academic career: concerns with safety and survival (getting a doctorate and tenure),

then a shift to respect needs and desire for genuine prominence and status in the field, only then having more time for family and friends, and finally a less driven and more relaxed concern to develop and express all those abilities, capacities, generativities, and interests that have earlier been pushed aside or left unattended in the pursuit of a career. Maslow is explicit in proposing that mentally healthy self-actualized people are "better knowers"; writing in *The Psychology of Science* (1969), he proposes that some people have a higher capacity for "taoistic knowing" - a natural, receptive, undistorted attunement with processes in the world.

- Jane Loevinger's work on ego development (Loevinger, 1976; see also Hauser, 1976) is concerned with the principles or organization of the mind, especially the changing relations among emotional dynamics and internal structure. Her evidence supports a view of six qualitatively different stages involving a move from essentially egocentric, asocial selfishness (the childish psychology of Freud's id) to a social integration and context embeddedness responsive to authority and social conformity, to an outgrowing of authority and conformity in individuation, maturity, and autonomy. Both Loevinger and Maslow agree that their highest stages are attained by almost no one.

- Jaques (1976) has explored the development of work capacity in organizations and sought to explain the endurance of social and political hierarchy as a consequence of the distribution of seven qualitatively different mental capacities to deal with abstractions and to work comfortably with far-reaching concerns.

Jaques's first level, *perceptual-motor concrete,* refers to projects which are accomplished with physical examples of the desired output and require no independent judgment - for example, a clerk-typist who does straight manuscript typing, a card-punch operator, a supermarket cashier, an army private.

The second level, *imaginal concrete,* involves tasks in which there is no physical model to

copy and the worker must grasp an abstract idea of an ideal result. What must be achieved, however, is always action keyed concretely to specific people. Examples would include a head nurse allocating personnel among different functions and time schedules and a social worker who must diagnose needs and check eligibilities of clients and route them to the appropriate agencies.

At the third level, *imaginal scanning,* it becomes physically impossible to oversee or imagine all at once the work task; thus, success depends on a "feel" for multiple aspects of the job, each of which must be scanned separately in somewhat abstract forms (see also Etzioni, 1968, pp. 282-309; Hilgard, 1976, 1977). For example, the owner of a small business with 150 employees would need to be able to deal separately with accounting functions, inventory levels, sales activities, production scheduling, and so forth, typically using abstract summary input (balance sheets, cost-effectiveness ratios, productivity indices, etc.) rather than direct physical perception of activity. Level three is characteristic of work involving responsibility for roughly 50 to 350 people where there is at least some mutual recognition of who the people are.

At level four, *conceptual modeling,* there is a profound increase in work capacity - a capacity to work with multilevel abstractions using only occasional reference to physical things or specific people. At this level, the individual must become self-starting rather than relying on orders or a well-specified structure since neither the output nor the way to proceed can be foreseen or known concretely in advance. For example, an assistant departmental secretary whose job is "welfare reform" or "reducing health costs" or the head of a policy-planning staff at the State Department need to generate their own original, long-range, integrated work plans and be able to process multilevel intuitive feels for behaviors of entire systems composed largely of people they have never met.

Jaques believes that few people reach his fifth *(intuitive theory),* sixth ***(institution creating),*** and seventh (unlabeled) levels, but these all involve (a) increased capacities for

perspective, autonomy, and intelligent innovation and leadership with (b) an increasingly accurate intuitive sensibility about the behavior, trends, and needs within massively complex and far-flung arenas of responsibility, including entire societies and the world, and (c) an increasing capacity for taking and working effectively within longer time perspectives.

Jaques s theory of developing work capacity fits well, I think, some common-sense observations about the world. To give a personal example, I remember how shocked I was in junior high school to be assigned to write a five-page paper. Five pages! I could not imagine how anyone could ever write a paper that long! By senior year in college, most schools routinely expect a 20-page capacity, usually on single topics and with planning and work capacity levels of several months. By early graduate school, 40-page papers synthesizing and appraising diverse models or literatures are expected. By the doctoral stage we expect conceptual modeling, independent work, and multiyear planning on a normal science (i.e., single paradigm) project. The contributors to this volume probably evidence substantial further evolution to Jaques s fourth level or above in the perspective and capacity to orchestrate, have a differentiated intuitive feel for, critically appraise, and suggest innovations for, entire multiparadigm fields of inquiry.

Jaques s theory is not well tested as yet, but it goes beyond (and differs from) the work of Werner in several respects. For example, it implicitly argues that formally rigorous cognitive development (categories, rules, models) is less important than the development of personal sensibilities and intuitive feels for behavior of people and qualities of institutions (in this sense it is closer to Maslow s notion of taoistic understanding as the highest level). Second, Jaques believes there are upper bounds to any individual s potential for developing these capacities - people need challenging work geared just above their level of easy work capacity (over their heads, they become lost or paralyzed; too low, they become bored) to develop their potential, but the ability to do high-level work is not common.

Developmental theories are diverse, and the selected hypotheses below will use several

ideas (especially from psychotherapy; see Garfield & Bergin, 1978) not present in the above brief overview.

The Prediction of Semiconfused Thinking. Most development theorists propose a series of high-level stages that they believe only a few people out of a hundred ever reach. At these stages, people are often described as wise, with an integrated sense of themselves, a sense of perspective on life and on their own assumptions and thinking processes, a sense of vision, a humane, rationally based ethics, and a deep love of beauty and truth; they are described as altruistic and generative - caring deeply about mankind and future generations. They have attained a natural intuitive understanding of the behavior of people and institutions. They think more clearly and with more differentiation, flexibility, and creativity than ordinary people; they have good judgment. In their personal relationships they are solid, trustworthy, capable of a deep love for their friends and for mankind.

Perhaps the central prediction to be derived from such theorists is that most people in Washington have not reached these stages. Thus, research should show most people there to be semiconfused about what they are doing and why they are doing it, somewhat vague about their assumptions and supporting evidence, and with only modest differentiation, integration, and perspective in their thinking about the functioning of American society and the world (see Lindblom, 1959). They should turn out, in reality, also to be semiconfused in their thinking about issues in political and public philosophy and to lack a coherent, thoughtful, explicit, and systematically integrated vision for either domestic or foreign policy. Many will have lurking and deep suspicions and confusions, often not conscious, that they do not clearly understand what they are doing, the meaning and purpose of life, or where everything is or should be going. Even those who are bold and active will be bold simply because hey have a bold style rather than because they have first dealt thoughtfully, clearly, and fully with these issues - underneath, they too will turn out to be semiconfused.

The Prediction of Massively Underutilized Capacity. Almost all developmental researchers believe few people ever achieve the higher levels of understanding or the full use of their capabilities, a shortfall usually attributed to the poor design of society. In this perspective, a major source of the shortfall in government learning will be the inhibiting, stultifying things bureaucratic life does to the mind and spirit (see a later section) for a discussion of dysfunctions of bureaucracy).

The Need for Optimum Conflict. Most developmental theorists hold that the creation of appropriate problems, conflicts, and mystery is one key to growth. Hirschman (1958), for example, recommends a strategy of optimal disorder, the creation of bottlenecks and problems; and there is a nascent theory of readiness and sequencing of issues in psychotherapy. As teachers, I think we often make such a calculation implicitly, structuring a course to begin with simple problems, then moving to more complex problems when the capacity to handle the simpler ones is developed, structuring a flow from basic courses to more advanced courses that assume automatization of basic distinctions and skills and a Werner- or Jaques-like progression in capabilities. The best guess of how to do problem sequencing is still a metaphor, with conflict and complexity introduced so mastery is one stage beyond current levels. For example, attitude change theorists - (social-judgment theory) posit there is a range of differences from an individual s own views that can be challenged effectively and lead to change, to viewpoints that are so different that they are simply rejected (Kiesler *et al.,* 1969). Lieberman (1978) maintains that optimal problem structure and sequencing in therapy requires a problem to be neither too easy nor too hard for the mastery ability latent in a patient at a given time, It also seems to be useful to introduce conflict within a progressive frame, a conception that the task is one of mastery or learning or economic development rather than, for example, a debate between opposing orthodoxies or a demand from authority where some vital core of the individual would be felt to be potentially overwhelmed or under attack (Frank, Hoehn-Saric, Imber, Liberman, & Stone, 1978). This may he aided by new linguistic theories specifying symbolic formulations that can he deployed and sequenced with reference to the individual s existing,

context-embedded, cognitive structure (Bandler & Grinder, 1975a, 1975b; Haley, 1973; Watzlawick, 1978). (On the role of criticism generally, see Lakatos & Musgrave, 1970 and Radnitsky, 1973.)

The Need for Outside Perspectives. One of the central processes in psychotherapy is empathetic mirroring; that is, the simple process of someone else understanding what a person is feeling or doing and verbalizing it to make the perspective readily available (Kohut, 1977; Rogers, 1961). This capacity of the outsider to understand and explicate what is implicit, to **put** the self in perspective, has also been held to be crucial for advance in the social sciences (Berlin, 1962, p. 19). The usual assumption that knowledge is something one acquires from the outside is replaced by these theorists with the hypothesis that it is how individuals implicitly think - and also how they do not think - that is the key barrier to greater intelligence (see Laing, 1972).

To some extent, good reporters and columnists help to provide this perspective. Humor (such as the comic strip *Doonesbury* or the columnist Art Buchwald) probably also helps to develop perspective. But one crucial research issue is whether there are enough good people with enough resources, who are psychologically independent from current policy.

Usable Memory as a Basis for Autonomy. One of the problems which psychotherapy addresses is that many people *are* only their histories, a congeries of their memories and past behavioral patterns. That is, they continue patterns of behavior, perception, thought, and emotional reaction developed in the past rather than developing a perspective which allows them a selective use of their experience. By analogy, the executive branch may be deficient in two respects. First, it may have little effective memory (extending, at best, back only to the early 1960s in the lifetimes of people still there, but made worse because people today have different jobs than they held then, leaving new occupants to make the same old mistakes). Second, the onrush of history, with alleged rapid change, may not leave time to think about what could have been learned. (See Deutsch, 1953, 1963.)

General Observations. Developmental theories have yet to be carefully tested in application to the executive branch. Perhaps the most hopeful approach is Loevinger s. Her measurement instrument has been developed with great care and psychometric rigor, and it is one of the great achievements in both validated theory and psychological instrumentation in recent years. Kohlberg s manual is still changing and has traditionally been difficult for coders to learn to use. Maslow s theory has produced mixed results, probably because of different interpretations of his predictions, problems of scale construction (the most successful effort is Alderfer, 1972), and perhaps faults of the theory itself (Campbell & Pritchard, 1976). Werner s theory has not been tested with adults, and Jaques has yet to develop a measurement instrument.

Developmental theorists pose three issues directly. The first is the fear-security debate. Those theorists writing from therapeutic traditions often believe fear is poisonous to growth, a view which is a radical challenge to theorists such as Freud, who proposed it as one of the keys to inducing people to stay civilized and pursue higher order values.

The second issue is the conflict-nurturance controversy between Maslow and most other developmental theorists. Maslow implies that an environment providing security, respect, and love will lead to growth. Most other theorists believe conflict also is necessary. An associated (but not completely correlated) difference is between theorists who believe there is a growth instinct, a driving feeling in people that there is something missing in their lives, and those theorists who posit a state of equilibrium which must be disturbed by conflict to produce growth and who further believe (along with Plato) that the process can be extraordinarily painful, especially in dealing with separation anxiety issues (Bowlby, 1977a, 1977b) provoked by outgrowing authority structures, context embeddedness, and imagery encodings of trusting dependency on hierarchy. (On the suffering theory of growth, see also Suzuki from the Zen tradition in Barrett, 1958, p. 83; Odajnyk, 1973, p. 146 on Jung; and E. Wilson, 1972, p. 403.)

A third issue is whether the capacities for higher-order growth are universal or whether (Maslow, Jaques) some people lack the strength or native ability to develop that far. This is an empirical issue with potentially far-reaching political implications for normative democratic theory.

Selected Additional Issues

- The above three images of individual learning - 1.) unchanging nature, 2.) passive-reactive conditioning, and 3.) active engagement and autonomous development - although in many ways logically contradictory, are all in good repute among at least some members of the scientific community and among different people in Washington (Wolfsfeld, 1979); both Sagan (1977) and MacLean (1973) imply (correctly, I think) that all three images will be useful as the triune human brain operates, at different levels, by these three different processes simultaneously and partly independently. In this section, I want to set forth briefly additional bodies of specialized theory in five categories. First, I will discuss induced harriers to learning: stress, aversive motivation, burnout, and freezing following public commitment. Next I will deal with the two general emotional issues of unconscious dynamics and action moods in the collective identity of organizations or the polity. Third, I will discuss cognitive process models designed to describe learning from experience and the trends in artificial intelligence models. Fourth, I will discuss briefly two emerging fields in the physiology of knowledge and intelligence: body state encodings of qualitative knowledge and brain physiology processes. Finally, I will discuss the issues of recruitment and socialization.

Induced Blockages and Aversions

Stress. The concept of a generalized stress syndrome is widely accepted and has been diagnosed as a major inhibitor of government learning and rational decision making,

especially in international-relations crises, both in its individual (George, 1974; Holsti, 1972; Janis & Mann, 1977) and small-group (Janis, 1972) effects. While there are major differences between individuals in the predisposition to feel stress and in response syndromes (Horowitz, 1976), there seems to be general agreement that stress syndromes are triggered by situations of perceived threats to survival in which effective control is uncertain - which may include physical threats, threats to the psychological well-being of the individual (being fired, failure, criticism, loss of respect or love from others or loss of esteem for oneself, and identity changes, which for some people include an aversion to success), and threats to the well-being of people or causes the individual cares about. Stress syndromes are, at their base, physiological changes in functioning of the central nervous system and include increases in arousal and systematic physiological changes in blood and brain chemistry.

Characteristics of this shift to survival-mode functioning are probably familiar in academic settings (final exam sy ndrome). Major features (see Hermann, 1979) include (a) reduced capacity to focus and concentrate (e.g., staring at a book or rereading sections several times without anything registering); (b) chronic low-level fatigue; (c) alterations in sleep patterns (inabilities to sleep or to have restful sleep, or great increases in the need for sleep); (d) reduced sense of humor and increased irritability; (e) rigidity and freezing up (being stuck and unable to respond flexibly, innovate, or change behavior); (f) reduced time horizon (inability to think in long-range perspective); (g) fear of impending catastrophe (a fear that the world has the potential to come apart or collapse, with a complete loss of control); (h) frenetic hyperactivity (trying to do everything at once, usually accompanied by a flooding of thoughts about everything that must be done or that might go wrong); (i) emotional withdrawal (reduced depth of emotional involvements and reduced range of normal activities as these are shed to divert energies to the survival issues).

Associated physiological changes often include greater susceptibility to illness and disturbances in eating patterns and digestion. Restorative and self-therapeutic efforts can

include increased search for emotional support (with reduction in critical thinking and interpersonal conflict) (Janis, 1972), increased use of alcohol to unwind, and a hyperactive sex life used primarily to reduce and manage tension levels (a general review is Monat and Lazarus, 1977).

It is widely believed that performance is an inverted U-shaped function of stress - that is, either no stress or high stress leads to rapid deterioration of performance. As well, a second feature of this Yerkes-Dodson Law (of the relation between physiological arousal and performance) is that the more complex the task, the lower the threshold at which stress begins its deteriorating effect (Kahneman, 1973, pp. 33-37). A major related hypothesis from research on the audience effect suggests that physiological arousal levels increase in the physical presence of other people and perhaps when (as in government) there is imagined a potentially critical audience. As with well-trained athletes who typically set their best records in public, such arousal can improve performance of well-rehearsed behaviors by providing an optimum level of arousal for their performance; but it can also freeze up executive-branch cognitive restructuring, block flexibility, and undercut long-range thinking once an administration is in office and in the political spotlight (Zajonc, 1965).

We do not have data on typical stress levels in the executive branch, although Lasswell (1971) believed they were very high for senior officials and were primarily induced by the unconscious knowledge of inadequacy to handle complexity or control significant outcomes successfully. If present, such stress levels in political life, higher than the Yerkes-Dodson optimum for learning, would have serious implications: for priority research on amelioration of stress proneness through psychological or physiological intervention; for planning that major thinking and new learning will have to occur away from government and the front lines, in quieter settings; and quite possibly for a shift of responsibility away from the overloaded federal arena.

I would like to make two further observations. It is possible that one effect of stress is a kind of adrenaline "high," and there is also a possibility that it may he mildly addictive for some people. It should finally be noted that some informants in Washington are deeply skeptical that anyone there is under much stress.

Aversive Motivations. Mainstream organizational psychology literature seems to assume the legitimacy of hierarchy and managerial aims, but there is a secondary literature which argues that there is a disquieting, turbulent psychology of subordination which has dysfunctional effects for both the individual and the organization.

First, it is alleged, there is a conflict between personal ambition and the reality of pyramidal structure (most people will not be fully successful if they want top jobs), and it has been proposed that there are routine processes of "cooling out" employees (e.g., through incremental demoralization of employees while maneuvering them to accept the outcome as legitimate, B. R. Clark, 1970).

Second, as a part of this process Janis and Mann (1977) postulate an unacknowledged climate of frequent bad faith (or at least game playing and a lack of candor) on the part of many higher officials who, without actually lying, nevertheless mislead subordinates about their chances of career advancement. One study of this phenomenon, in the Department of State, showed that 600 career foreign service officers privately believed they had at least a "good" chance of eventually being promoted to one of only 85 ambassadorships (Harr, discussed in Etheredge, 1978, p. 140).

Third, the empirical work of Zaleznick and De Vries (1975) reports an undercurrent of envy, fear, and hostility on the part of the typical subordinate. In their view, hierarchies and contingent and uncertain rewards make people feel insecure, powerless, vulnerable, and dependent; they fear being a potential victim of authority. As one Department of Commerce employee put it: "They look at you and smile and seem supportive, but they have a

loaded revolver sitting on the table. And they re going to use it, they ll fire you, if they get unhappy. You have to play along like there really is no revolver because they also get angry if you question whether they are nice people. Freud s central prediction, over a half-century ago, was that males have an instinctive fear of aggression from older males in positions of authority; it is probably timely to test this idea.

Fourth, a substantial amount of bureaucratic life is held to produce covert rebellion, growing both from resentment of dependency and fear and from depersonalization. This rebellion is manifested in pervasive lack of enthusiasm, boredom, low productivity, red tape, and officious compensatory behavior to achieve recognition and respect. In the case of depersonalization, it is alleged that people in bureaucratic positions experience themselves to be there as functionaries, to do their job, and that beyond this no one in authority cares very much about them, that they do not get the respect they deserve (see also the theory of *ressentiment* of Nordstrom, Friedenberg, & Gold, 1967).

Such theories of fear, resistance, and covert rebellion, as well as theories of psychological reactance to a lack of power and of vulnerability to others who are powerful (Brehm, 1972; Lefcourt, 1976; Sennett & Cobb, 1973) are not well studied in government. But insightful work by Argyris (1967), at the Department of State, and by Argyris and Schon (1978) suggests that the official norms and talk of candor and mutual aid in problem solving are often belied by real games and maneuvers to stay out of trouble, norms that undercut bases for open communication, effective top-level monitoring, and organizational learning. Cover your ass, don t make waves, and ke ep your skirts clean are apparently taken by many people to be good maxims - although organizational psychologists have not yet tested the obvious prediction that such well-known maxims have Darwinian survival value in some organizations.

A final theme in this realist tradition is that top managers themselves profess innocence about how subordinates perceive them and react to their messages, apparently having an

invariantly virtuous self-image and attributing the causes of fear, avoidance, timidity, and caution to the employees themselves rather than to their vulnerability, powerlessness, and lower respect vis-à-vis management. A familiar analogy is the classroom where professors seem, universally to profess that students should feel free to disagree with them and not be deferential - and believe that it is safe for students to do so - but where some students feel the realities are quite different and, in fact, speak only to score points, and if they are confused, unsure of themselves, feel inadequate, or in trouble, tend to maintain a bold front, avoid teachers, and thus (to their mind) avoid a bad reputation or doubts about their ability. (Professors, too, probably attribute this to student immaturity.) Which reality - trustworthy or mistrusting - is more realistic is an open question.

What these theories also imply, however, is that employees do not simply have fixed motives for which they seek satisfaction, as the economists would have it. Instead, they become part of organizations which induce motivational preoccupations and reactions, often through real deprivation or fear of potential deprivations produced within the system itself. One motivation for upward mobility, then, is to increase or regain a secure autonomy and respect of which one is deprived as a condition of employment and to finally achieve a position where one does not have to take orders and be at risk from the potential capriciousness of multiple layers of supervisors or where, simply and poignantly, one can achieve the recognition and agreement that one exists as a worthwhile person symbolized by a private office.

Burnout. Another phenomenon is burnout - that bureaucracies are often frustrating places to work and can wear people down (Seligman, 1975). The American political system is so pluralistic, with so many veto points, that even enormous effort can often prove unrewarding. And if one wants to influence high policy, a typical government job may not give any greater advantage than working for an interest group, a consulting firm (perhaps at higher pay - one reason, in addition to politically inspired personnel ceilings - that there has been a massive shift to contract consultants), or a university. One theory is that young,

idealistic, energetic people may last 5 - 7 years; unless they have a chance to make genuine contributions, they begin to adjust, stop working weekends, and lower their levels of hope and aspiration.

Resistances to Rethinking after Personal and Public Commitment. Although there are some dissenters (e.g., Leonard, 1969), many writers have proposed that learning is uncomfortable or even painful, perhaps especially when a person already has views or ways of thinking and the implication of learning is that those views were wrong and that the person was not in as much intellectual control as imagined (Langs, 1978). The problem here is that top-level political appointees often make public commitments which could make it even more painful (personally as well as politically) to rethink and change (Abelson *et al.*, 1968; Festinger, Riecken, & Schachter, 1956; R. A. Jones, 1977; March & Olsen, 1976, p. 79). And although American politicians may be especially pragmatic and nonideological (Payne & Woshinksy, 1972), earlier public commitments may become embodied as major elements of personal identities for people recruited to staff required agencies and implement older policies (Arrow, 1974, p. 29; Searles, 1961). Unfortunately, public policy today is like medicine was for most of history: practitioners are accountable to produce results without a validated theory of how to do it. Thus, there is good reason to think they ought to learn and change. But meanwhile it is also traditional American political practice to scream and yell and browbeat an administration for its failure to solve all the problems of the world - and for not doing it quickly enough. If clinical theorists are right that people only learn, fundamentally unfreeze, in situations of trust and unconditional positive regard, the likelihood of new directions is probably lower after many people are personally and publicly committed to old ones.

General Emotional Issues

Unconscious Motivation. The theories of major unconscious motivation in Washington are

largely untested, as indeed they are in the case of political life generally (see De Board, 1979; Brown, 1981; Brown and Ellithorp, 1970). Solving the problem (if one exists) is perhaps relevant especially to clarify the problem of what people in Washington are doing other than learning. Harold Searles (1979) has made an impressive beginning by differentiating over two dozen unconscious contributors to apathy in the face of the environmental crisis, and imagery-encoding theory (discussed above, pp. 33-34) may offer promising avenues by providing a structural translation of psychoanalytic work.

Let me list 18 basic areas of unconscious motivation relevant to executive government learning: (1) narcissistic ambition and hardball politics (Etheredge, 1979b; Kael, 1974/-1977); (2) machismo and other overconfidence syndromes (Etheredge, 1978 and above, pp. 93 - 94); (3) the elements of transference and hyperactivity - despair bipolar organization engaged with the imagery encoding of liberal activists (Etheredge, 1979c); (4) Oedipal syndromes (e.g., male envy, jealousy, anger, and fear in relations with older and more powerful adults); (5) Erik Erikson s theory of a pervasive Laius syndrome (older male adults enforcing subordination and identity engulfment on younger males, jealously guarding their power and prerogatives, being fearful of or hostile toward those who are bright, creative and independent; generation and sustaining of institutions that demoralize young people and mold them into second-rate, conformist sycophants) (Erikson & Newton, 1973, pp. 117 - 118); (6) unconscious guilt over inadequacy (Lasswell, 1971); (7) countertransferences (Searles, 1979) to the American public or client groups (e.g., as children); (8) Washington, agency, political, age cohort, interest group, professional, or individual ethnocentrisms (LeVine & Campbell, 1972); (9) obsessive syndromes in the quest for intellectual or political control; (10) fears of obtaining knowledge and of competence in problem solving (Maslow, 1968); (11) avoidance of feelings of loss and depression in resistance to change (Marris, 1974); (12) conscious or unconscious fears and extrapolations of loss of control (e.g., domino scenarios) stirred up by change (Jaques, 1955); (13) inhibiting arid distorting effects of control ambitions (Maslow, 1969); (14) hypnotic effects of power hierarchies and subordination (Etheredge, 1976b; Freud, 1921 /

1955); (15) resistance to influence from strong thinkers (Bloom, 1973; Kohut, 1979); (16) alleged unconscious anal sources of impersonal, controlling approaches to problems and subordinates (N. O. Brown, 1959, Part 5); (17) restricted learning agendas and specializations as a defensive maneuver to preserve a coherent and manageable identity (Snyder, 1973).

Perhaps the key contribution, from depth psychology, will be an elaboration of (18) dependency theories of bureaucratic life. Dependent people tend to be fearful of, and to resist, change (Searles, 1955/1965, esp. pp. 118, 131, and 1961/1965). They may have a greater need for leaders to define reality, lead, and think for them (Etheredge, 1979c; Freud, 1921/1955), be more prone to stress, complain without being constructive, avoid responsibility, and tend to wait for other people to solve problems. They may also he prone to symbolic politics rather than substantive problem solving. It is important to emphasize, however, that dependency can be induced and sustained by bureaucracies and need not be solely a personality trait (Etheredge, 1976b; Fenichel, 1945, pp. 491-492). A key marker of psychological dependency appears to be a structure of spatial imagery encoding (see pp. 33 - 34) of reality in which, for example, a departmental secretary or president is experienced as located subjectively above the individual (Etheredge, 1977, 1979a).

Action Mood Theory. Motivation theories often postulate that learning follows only after a prior emotional consensus, the crystallization of an individual, organizational, or national action mood experienced subjectively as a decision to move (see muscle innervation theories of thinking in below, pp. 62-63) in a direction. At the individual level, kindergarten teachers speak of reading readiness (meaning both cognitive and emotional developmental stages) and psychiatrists often speak of the readiness of individuals to face and deal with certain issues. At the political level, the phenomenon was portrayed by a researcher at NIMH who spoke about developing special physiological tests and using national random samples to monitor stress levels in American society and use these results to design better federal public health programs. But, he commented wistfully, it will

probably be 20 years before we are ready for this - not primarily because of technical barriers, but because people are not ready to move in this direction and support learning how to do it.

It is asserted by various writers that the phenomenon of action moods exists and that they are crucial to public-policy directions: ideas whose time has come (which, allegedly, nothing is more powerful than) and which capture imaginations. Schon (1971) refers to ideas in good currency, Burnham (1970) to critical elections when the American electorate reformulates emotional consensus, and Downs (1972) to issue cycles. J. Q. Wilson (1966) asserts that a sense of crisis increases innovation.

Cognitive Process Modeling

Learning from Experience. It is sometimes argued that experience can be a defect, that it reduces learning rates because it sustains old habits and previously formed views, and that only young beginners can see the world fresh and without encumbrance of the codified error embedded within the legitimacy of the Establishment (creativity rates often drop by the mid-20s in mathematics, by 40 in the social sciences). Nonetheless, it is possible that some people learn substantially from experiences, and I will concentrate here on the theory that it can be a good teacher (see Muir, 1977, chaps. 10-12, on the effects of holding power on personal development).

What is it that makes people better at learning from experience? One likely theory is that *varied* experience is a key. It takes at least 15 years of hard work for even the most talented individuals to become world class chess masters; what they seem to learn is a repertoire for recognizing types of situations and scripts (Schank & Abelson, 1977) or intuitive sensibilities and understanding about how these situations will likely unfold. Simon (1978) estimates a differential repertoire of 50,000 situation recognitions at the

world class level in chess. (There are not yet any comparable estimates for politicians and areas of political life.) There is also some increase in overall long-range strategic-planning ability - beginners typically are hard pressed to think beyond one move, whereas world class players often think three, or sometimes five, moves ahead in calculating alternative reactions of their opponents.

Evidence from Axelrod (1973, 1976), Hart (1976), Etheredge (1978), Reychler (1978), and Holsti (1976, 1977), implies (although it may be a method artifact) that national-security elites tend to see only one move at a time in reactive patterns, without perspective on feedback loops or their own thought processes; a growing perspective on arms race dynamics, however, suggests a two-move perspective capability may be developing. Bloomfield s (1978) study of elite foreign-policy planners also suggests that a one-move capacity theory might be too low for some top-level planners, as does Lefberg s (1978) study of a Supreme Court justice.

Data from experienced and highly successful chess players, poker players, and tennis players suggest the theory that one further kind of learning from experience is the capacity not just to diagnose specific game situations but to model (psych-out) different opponents (Findler, 1978). It is also likely that experienced players have developed more efficient scanning, with the ability to discard unnecessary information and arrive at a general, intuitive sense of where to devote attention; for example, the inefficiency of computer chess programs is that they have to do too much analysis of unproductive possibilities to arrive at good moves (on the use of superior memory rather than superior heuristics in medical diagnosis expertise, see Elstein, Schulman, & Sprafka, 1978; Szolovits & Pauker, 1978).

Artificial Intelligence and Cognitive Processes. The work to develop artificial-intelligence models in social science has been spurred in part by visions of moving beyond the simple, fixed coefficient equation models of first-generation social science to formally recognize and explicitly integrate richer, more differentiated, and more psychologically complete accounts

of perceptual, interpretive, emotional, and decision-making processes - including formal representation of the capacity for self-reflection (e.g., using new mathematical functions which take themselves as arguments). (See, for example, Alker, 1979; Lachman, Lachman, & Butterfield, 1979; Simon, 1979). The trend in basic research is likely to accelerate both from the Sloan Foundation decision to fund centers for cognitive studies at several major universities and from exponential increases in low-cost computer power. At the moment, however, federal models of the economy (and far more detailed energy models of several thousand equations designed to model each oil field and energy source and estimate demand by fuel type and congressional district through 2020) do not have within themselves the formal capacity to learn; nor do they model any of us as having a capacity to learn or change qualitatively beyond simple reactions to prices. As well, good, integrated models of American or world social processes (other than economic) have yet to be developed in Washington and lag far behind existing sophistication (Etzioni, 1968) about the processes and likely cross-sector and cross-level impacts that should be included.

Physiology of Knowledge and Learning

Body State Encoding. One hypothesis implied by psychoanalytic writers is that thinking involves physical energy and sensations and that knowledge and blockages to knowledge are encoded as body states (see, e.g., Ferenczi, 1953; Freud, 1895/1966; Klinger, Gregoire, & Barta, 1973; Lichtenberg, 1979; Schachtel, 1966). These physical bases can range from subvocalization of words in writing, reading, and some forms of thinking, to the body state encoding of intuitive "feels" for problems. For example, learning psychotherapy skills can involve processes of emotional (hence physical, body encoded) discomfort and pain in acquiring knowledge (Langs, 1978, p. 6); it is not uncommon for some political-science students to report physical discomfort when studying statistics; and creative individuals are said typically to experience almost unbearable tension states when working on a problem (Kohut, 1978, pp. 818-819), probably because of their deployment and restructuring of

personal identity fragments when encoding problems and during the creative process (Brenman-Gibson, 1978).

Work to develop a differentiated theory of body state encoding, while involved in some of the new psychotherapies (Geller, 1978), has only recently begun (Fisher, 1970; Fisher & Greenberg, 1977b). The central therapeutic and educational hypothesis is that awareness of (being in touch with) such body state encoding increases effective intelligence, especially in the intuitive mode. Work on field dependence (with over 3,000 studies to date) has produced strong evidence that differences in body boundary sensations are linked to major cognitive-style differences and sensitivities to other people (see Bennett, 1981; Witkin, Moore, Goodenough, & Cox, 1977).

Brain Physiology. Work on the base of learning in brain physiology, especially chemical and neuronal storage and retrieval of memory, is increasing rapidly. Research mapping the processes of stress effects is also increasing (see pp. 51-52, above). There is growing research on pertinent drug-aided learning, which is already relevant because people in Washington now make routine and heavy use of one chemical (caffeine) to augment learning rates, attention, and memory functioning (Nash, 1962; see also Sitaram, Werngartner, & Gellen, 1978). Other chemicals (alcohol and to some extent marijuana) are also used routinely in Washington, in part to cope with stress. Assuming the validity of extrapolation from national rates, about 12% of the men and 20% of the women in the executive branch also use the minor tranquilizers (e.g., Valium) regularly (Harvard Medical School Health Letter, 1978, pp. 3 - 4). Reviews of current research on brain processes are available widely - for example, in the new journal *The Behavioral and Brain Sciences,* Luria (179), Hyden (179), Gazzaniga (1978), and, in more popular forms, Restak (1979). For further implications see the discussion of Diagnostic Repertoires (below).

Recruitment and Socialization Patterns. The capacity to attract, to Washington jobs, first-rate, intellectually restless people, who are highly motivated, self-starting, and willing to

take personal responsibility for solving important problems rather than just doing an acceptable 9-5 job, is probably crucial to effective learning and probably depends on historical circumstances as well as agency characteristics. To a significant extent, first-rate people are probably attracted by what, in their times, are considered important, challenging problems where there is opportunity for significant movement. Meehl (1977) gives theology as an example of a field which over the past century has seldom attracted first-rate minds. And in Washington there is active informal discussion among first-rate people about job opportunities, where the action is, and who is good to work for. In an informal poll of policy analysts, the United States Office of Education had a reputation as a hopeless quagmire, a place where no one should go, and the Department of Commerce was considered boring; the Social Security Administration, Council of Economic Advisers, and Food and Drug Administration had high marks.

For current reviews of socialization theories about work careers see Van Maanen (1977), Van Maanen and Schein (1979) and McCall and Simmons (1978).

Distinct attractions of political life or public-service careers may produce recruitment patterns which simplify both motivational analyses and the design of different incentive systems for different people. Meltsner (1976), for example, finds Washington policy analysts can be reliably categorized as either substantively problem oriented or political-process oriented (and, rarely, as both). (See Winter, 1981, for further research.)

From a comparative perspective, one of the key important processes may be recruitment from university public-policy programs which seek to develop professional identities in their students and which have in-and-outers who return to universities and make current inside information and top-level perspectives available to young people. Policymaking in most other countries is often more elitist and closed than it is in the United States, with consequent deprivations of students (see, e.g., Sundquist, 1978a).