Using Gottfredson's Theory of Circumscription and Compromise in

Career Guidance and Counseling

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At the beginning of the 20th century, 36% of workers were employed in farming, fishing, forestry, and other agricultural work, and only 4% in professional services (United States Census Office, 1902). By the beginning of the 21st century, only 2% of the workforce remained in agriculture, with 16% now in the professions and another 15% in management (U.S. Census Bureau, 2002). New technologies in transportation and communication have led to the proliferation of new kinds of work, and also made it easier for people and jobs to migrate around the nation, even the world.

The full menu of occupations and life styles that the modern world offers most individuals is thus far larger than it was a mere hundred years ago. At the same time, American society has tried to make opportunities more equally available to all individuals, regardless of gender, ethnicity, or class. While barriers remain, many have fallen in the last half century. Both the wider variety of occupations and more equal access to them bespeak vastly expanded vocational options for young people.

But this expanded choice is a challenge, even a burden, for young people. The opportunity to choose is also the responsibility to choose, and to choose wisely. Moreover, the occupation one holds is increasingly seen as the measure of who one is in society. It is no wonder that so many youngsters procrastinate or seem paralyzed by anxiety when required to make vocational decisions. Many just drift or settle for any job that comes their way.

The theory of circumscription and compromise focuses on how young people gradually come to recognize and deal with, or fail to deal with, the array of vocational choices their society provides. After summarizing the theory, I use it to outline a career guidance and counseling system for facilitating growth and reducing risk during the school years. Although not elaborated

here, the system can also be used to diagnose and remediate common vocational problems in

adolescence and aid adults who wish to revisit their career choices.

<div align="center">THE THEORETICAL CHALLENGE</div>

Imagine a thousand newborns in their cribs. They know virtually nothing of either the

outside world or of themselves, probably not even that the two are distinct. Ten years later, all

will know a great deal about both. Within twenty years, all will have made many life-shaping

decisions, often without realizing it. At thirty, the thousand will have spread across a great

variety of occupations and social landscapes.

Chance will have played a part in who ends up where, but the pattern of outcomes will

hardly be random—or novel. Regardless of their own social origins, all thousand newborns will

develop essentially the same view of occupations by adolescence. Like adults, they will

distinguish occupations primarily along two dimensions—their masculinity-femininity and their

overall social desirability (prestige level). They will also share common stereotypes about the

personalities of different kinds of workers—accountants vs. artists, engineers vs. teachers, and so

on. Despite their similar perceptions, their occupational aspirations will nonetheless reproduce

most of the class and gender differences of the parent generation: girls will aspire mostly to

"women's" work, boys to "men's" work, and lower class youngsters to lower level jobs than

their higher social class peers. And yet, not even siblings will be "peas in a pod," because their

preferred vocational selves and life paths tend to differ, sometimes dramatically (Dunn &

Plomin, 1990). As adolescents, perhaps all thousand newborns will report wanting jobs in which

they can perform the kinds of tasks that interest them, but many will not be able to articulate just

what their interests are. Few will know what workers actually do on the job, even in the

occupations to which they aspire. Some will be forced to take jobs that are not consistent with their interests, but many will do so by choice.

What explains this somewhat puzzling pattern of aspirations, of knowledge and ignorance, at the threshold of adulthood? The circumscription and compromise theory suggests that four developmental processes are key to understanding it. Each presents different risks that, as discussed later, can be minimized to enhance career development.

THE THEORY: KEY DEVELOPMENTAL PROCESSES, PRODUCTS, AND STAGES

Most vocational theories, including this one, view vocational choice as a matching process, that is, as individuals seeking occupations that satisfy their interests and goals and for which they possesses the skills, abilities, and temperament. This process requires that young people first learn the relevant attributes of different occupations and of their own developing selves, and then discern which occupations have rewards and requirements that match their still-evolving interests, abilities, values, and goals. Actually implementing a choice then requires that they identify available options, weigh the alternatives, and find means of entry.

The circumscription and compromise theory suggests that four developmental processes are especially important in the matching process: age-related growth in cognitive ability (*cognitive growth*), increasingly self-directed development of self (*self-creation*), progressive elimination of least favored vocational alternatives (*circumscription*), and recognition of and accommodation to external constraints on vocational choice (*compromise*).

Cognitive Growth

The matching process is cognitively demanding. The tasks it involves span all six levels of Bloom's (Anderson & Krathwohl, 2001) widely-used taxonomy of cognitive tasks in teaching and learning: for example, learning isolated facts (*remember*, Bloom's lowest level), spotting and

understanding similarities and differences (*understand*), drawing inferences from and assessing the relevance of information (*apply*), integrating information to assess the pros and cons of a decision or course of action (*analyze*), applying one or more criteria to judge which choices are better than others (*evaluate*), and developing a plan to meet a goal (*create*, Bloom's highest level).

Not surprisingly, the vocational assessment and counseling profession is devoted primarily to helping adolescents and adults improve such knowledge and decision-making. Counselees' competent engagement in the process is often labeled *vocational maturity*. However, our thousand newborns will begin narrowing their preferences and making other vocationally relevant decisions long before they are cognitively proficient or aware that they are making such decisions. Understanding the impact of pre-adolescent cognition on vocational development is therefore essential for facilitating vocational growth in adolescence and beyond.

Children's capacity for learning and reasoning (their *mental age*) increases with chronological age, from birth through adolescence. Children progress from thinking intuitively in the preschool years, to concretely in the elementary years, to abstractly in adolescence; from being able to make only simple distinctions to multidimensional ones. They recognize more similarities and differences, and increasingly abstract ones, which they use to make sense of the diverse phenomena in their lives. In short, with age, children become able to take in, understand, and analyze ever larger bodies of information of increasing subtlety and complexity. They gradually notice and figure out more aspects of the many-layered world around them.

Same-age children also differ considerably among themselves in the general learning and reasoning ability required to do this. At any given chronological age, some will be far above or below their peers in mental age (that is, higher or lower in *general intelligence*). The brighter the

child, the more information it will understand and extract from its surrounds and from direct instruction.

Children's steady growth in mental competence affects their behavior and lives in many ways. In the vocational realm, its two major products are the *cognitive map of occupations* and the *self-concept.* Both are incomplete but organized understandings of the occupational world and of the self that children develop and elaborate with age. Although our thousand newborns will all construct essentially the same cognitive map of occupations, they will develop increasingly individualized self-concepts. As we shall see, children's conceptions of people and occupations develop in parallel as they perceive first one, then two, then more dimensions of difference. The first distinctions that young children draw among both people and jobs involve their most concrete, visible attributes. As detailed later, children's views of both become more complex and nuanced as they become capable of making multidimensional comparisons, inferring internal states, and discerning patterns in behavior.

This progression is so natural and universal that it is seldom perceived as vocationally relevant, if noticed at all. Vocational understanding and decision making tends to garner attention only when its demands crescendo, that is, when adolescents simultaneously realize the full complexity of making life decisions and the imminent need to do so.

Self-Creation

A pre-existing occupational world awaits us at our birth. That world is large, evolving, and complex. However simplified and incomplete children's early cognitive maps of it are, it is there to be observed and explored. Children will also construct self-concepts, but none is born with an already developed self to observe. Where does that self—the self they will seek to know and implement—come from? Is it fixed in their genes? Is it stamped in by the environments that

happenstance thrusts upon them? Or, are their "selves" perhaps just incidental by-products of a contest between the two forces?

The self is none of these things, because we are not passive products of either nature or nurture, but active agents in our own creation. Counseling psychology's insight that individuals are both unique and agenic is confirmed by what might seem an unlikely source, behavior genetics. We are unique individuals because we are products of unique genotypes (unless identical twins) and unique experiences. Biologically related individuals who are reared together tend to be similar for both genetic and environmental reasons, but behavior geneticists have been surprised to discover how few and temporary the effects of shared environments are in Western populations studied so far (Plomin, DeFries, McClearn, & McGuffin, 2001; Rowe, 1994). For instance, the circumstances we share with siblings, such as our parents' education, income, interests, and childrearing style, have little or no impact on our basic ("big five") personality traits at any age, and their impact on intellectual abilities wanes and, for general intelligence, dissipates altogether by adolescence (Loehlin, 1992; Plomin & Petrill, 1997).

More culture-specific personal attributes such as interests, attitudes, and particular skills are more influenced by shared environments (e.g., Betsworth et al., 1994; Tesser, 1993). Vocational interests are fairly general products of the close partnership between nature and nurture, but their emergence is more culturally-contingent and experience-dependent than are the basic personality traits and abilities. In fact, they appear to represent particular constellations or intersections of those fundamental human traits that cultures mobilize for specified ends, such as managing accounts or repairing machines (cf. Ackerman & Heggestad, 1997). These constellations seem to be assembled, like standard toolkits, to accomplish a culture's recurring tasks. The experiences that would activate, exercise, and consolidate them as distinct vocational

interests (e.g., in working with numbers vs. machines) are not available to people of all ages or in all locales, precisely because they involve specialized realms of cultural activity (e.g., clerical, artistic, scientific, political). Many adolescents will therefore lack sufficient experience to bring out or verify their more culturally-targeted interests, abilities, and values.

To the extent that the slings and arrows of fortune have a lasting influence on our highly general traits, it is mostly the arrows that strike us one at a time (called *nonshared* effects), not family by family (*shared* effects; Jensen, 1997). Even biological siblings reared together become less alike in general ability and personality as shared environmental effects wane relative to nonshared ones. Thus, while both genes and environments make us similar to people with whom we share genes and environments, the unique aspects of both our nature and nurture guarantee that we will be distinct as individuals and become increasingly so with age.

Behavior genetic research also confirms that we help to construct ourselves and determine the form we take. First, we become who we are through experience, that is, by engaging the world around us. Only through repeated experience, for example, do our genetically-based temperaments become consolidated (*traited*) as enduring personality traits. For attributes to become traited does not mean that they become fixed in stone, but only that they are now relatively stable manifestations of our individuality across different situations: for example, that shy John avoids crowds, cocktail parties, and working in teams, but gregarious Jane loves them all.

Second, we do not just implement a nascent self by stepping out into the swirl of life, as if flipping a switch that initiates a preprogrammed sequence of events. We also affect the direction of our development by exposing ourselves to some formative experiences rather than others. Behavior geneticists first realized that development might become more self-directed

with age when they discovered that phenotypic (observed) differences in IQ become increasingly

heritable with age. For example, with age, adopted children become less like their adoptive

family members but more like the biological relatives they have never met (Plomin et al., 2001).

To explain this startling discovery, since confirmed for academic achievement too,

behavior geneticists have proposed a *genes-drives-experience theory* (Bouchard, Lykken,

Tellegen, & McGue, 1996). As children mature they take an increasingly active and independent

role in selecting, shaping, and interpreting their environments. Moreover, when given the

opportunity, they select experiences more in line with their genetic proclivities. Each comes into

the world with a different internal genetic compass, which causes them to be attracted to or

repelled by different kinds of people, activities, and settings. The anxiety-prone will more often

avoid anxiety-provoking situations; the emotionally stable will perceive the world as more

benign than will the neurotic; and the musically gifted will more often seek opportunities to

develop their talent (called *active gene-environment correlation*). People also create different

environments for themselves by evoking different reactions from the people around them. The

obnoxious will evoke more hostile social environments for themselves than will the amiable, and

parents will appropriately provide different kinds of toys, support, and developmental

opportunities to their children when they differ in needs, interests, and talents (called evocative

or *reactive gene-environment correlation*). In addition, people differ genetically in their

sensitivity to given external influences, such as particular pathogens or kinds of instruction

(*gene-environment interaction*).

Therefore, even if we were all provided identical parents, classrooms, and

neighborhoods, our personal proclivities would constantly incline us to perceive, provoke, and

exploit them differently. As a result, we would eventually come to inhabit different worlds.

When and where people are free to do so, genetically unique individuals refashion common environments in ways that reflect, reinforce, and better resonate with their personal tendencies. Environments therefore are not just "out there" molding us from the outside in, but are themselves partly genetic in origin because we have had a hand in shaping them more in line with our genotypes (Plomin & Bergmann, 1991). Our lives, our close personal environments, are our *extended phenotypes*. The partly genetic origin of environments is confirmed by research showing that the occupations and educational credentials that people obtain, the major life events they experience, the social support they receive, and other important aspects of their lives are often moderately heritable (Bergmann, Plomin, Pedersen, McClearn, & Nesselroade, 1990; Lyons et al., 1993; Plomin, Lichtenstein, Pedersen, McClearn, & Nesselroade, 1990; Rowe, Vesterdal, & Rodgers, 1998).

Our genetic compass constitutes the core of our individuality and, from the deepest recesses of our being, quietly but incessantly urges (not commands) us in some directions rather than others. It competes with a cacophony of signals emitted by our culture, but it operates like a gyroscope, helping us orient ourselves while being pushed this way or that. It contributes some consistency to our myriad daily choices, which cumulate over time to shape a life path. Which forks we take at each stage in life is constrained, of course, to the ones that currently exist in our culture, especially for persons in our situation. No one becomes a loan officer or astronaut in societies that do not lend money or send anyone into space. We are also constrained by our past choices—say, wanting to go into dentistry after having become an accountant, or to become a police officer after having disqualified ourselves by committing a felony.

It should be noted that our genetically-conditioned tendencies are not fully fixed, but change somewhat with age as genes turn on or off, puberty being an obvious example. The social

environments to which we have access or must move also change with age. Our streams of experience inevitably shift as a result, somewhat altering the contours of our lives and selves in the process, no matter how deeply layered they have become. We are therefore to some extent always works in progress, finalized only by death.

Just as our personal traits develop only through experience, we come to know them only while engaging the world. We must infer our personalities and abilities by noticing what we do well, how we typically interact with others, how other people react to us, how we feel about our various experiences. That is, our genetic compasses are made manifest by what we resonate to and what repels us, perhaps especially when their signals conflict with the expectations of family or friends. The *self* resides in these long-term consistencies in behavior, belief, and feeling, and *self-insight* lies in gaining a fuller, clearer-eyed view of them. The *self-concept* derives from our perceptions of this individuated self and what we might want or fear it to be.

When viewed from a life course perspective, the genetically-conditioned selection, shaping, and interpretation of our life environments is called *niche seeking* (Scarr & McCartney, 1983). Vocational choice is one particularly important element of it. Niche seeking does not occur in a cultural vacuum, of course. Our thousand newborns were all born into a social niche, and it is from their social origins that they will view and venture forth into the larger world. Cultures provide or allow only a limited array of niches, but free societies still give their members much leeway to create selves and life niches more in line with their genetic proclivities.

Circumscription

As just noted, modern culture provides an extensive menu of occupations and life niches. Our thousand newborns will never learn much about most of them, or that others even exist. What nearly all learn, however, is that there are major varieties of work and that these varieties

occupy different places in the general social order. We are social beings and therefore exquisitely sensitive to where we fit, or would like to fit, into society. Vocational choice is a highly public way of asserting who we are. It is therefore the social aspects of jobs that often concern us most and which children consider first.

Vocational choice begins as a process of *circumscription*, of eliminating occupational alternatives that conflict with one's self-concept. Early in life, children begin to rule out whole sets of occupations as socially unacceptable for someone like themselves as they start to recognize the more obvious distinctions among jobs. They rule out progressively more sectors of the occupational world as they become able to perceive additional, more abstract dimensions of suitability or *compatibility*. Most such circumscription occurs without their knowing, or wondering much about, what workers actually do in the jobs they so peremptorily reject.

All children move through the same four stages of circumscription, shown in Figure 1, but some faster or slower than others depending on their cognitive ability. The ages and grade levels associated with the stages are therefore only approximate. The stages overlap but coincide roughly with the preschool years, elementary school, middle school, and high school.

Figure 1 About Here

Stage 1: Orientation to Size and Power (Ages Three to Five). Children in the preschool and kindergarten years progress from magical to intuitive thinking and begin to achieve object constancy (for example, they know that people cannot change their sex by changing their outward appearance). They begin to classify people in the simplest of ways—as big and powerful versus little and weak. They also come to recognize occupations as adult roles and have

ceased reporting that they would like to be animals (bunnies), fantasy characters (princesses), or inanimate objects (rocks) when they grow up. As indicated in Figure 1, their vocational achievement is to have recognized that there is an adult world, that working at a job is part of it, and that they, too, will eventually become an adult.

Stage 2: Orientation to Sex Roles (Ages Six to Eight). Children at this age have progressed to thinking in concrete terms and making simple distinctions. They begin to recognize more occupations, but primarily those that are highly visible, either because of frequent personal contact (teachers) or because their incumbents wear uniforms, drive big trucks, and otherwise draw a child's attention. Children also rely on highly visible attributes to distinguish among varieties of people, the most obvious and salient one for them at this age being gender. As concrete thinkers, they distinguish the sexes primarily by outward appearances, such as clothing, hair, and typical activities. Being dichotomous thinkers, children see particular behaviors and roles (including jobs) as belonging to one sex but not the other. Rigid thinking confers a moral status on the dichotomies it creates, and children of both sexes tend to perceive their own sex as superior and to treat sex-appropriate behavior as imperative. Person-job match is therefore perceived in terms of sex role. Although children's views of people and jobs will become more subtle and complex, their naïve early understandings have already turned them toward some possible futures and away from others.

Children are also starting to determine more of their own experiences (choosing friends, play activities, and role models) and thus the direction in which they develop. The cultural menus from which they make such choices also become larger with age. Girls and boys tend to be offered and prefer different experiences. Cultures have somewhat different expectations for the two sexes and those cultural differentials, whatever they are, may be reinforced by persisting

genetically-conditioned sex differences in activity, preference, and behavior. Culture alone does not sustain gender differences in occupational aspirations (say, working with people rather than things), as any parent who has tried to interest sons in dolls and daughters in trucks is likely to testify. But culture can contribute to sex differences by pushing genetically diverse individuals to adhere to a common average sextype for their sex. Thus, while nature and nurture will both affect degree of vocational circumscription by sextype, one-size-fits-all cultural prescriptions encourage many poor person-job fits because the members of both sexes are genetically diverse and therefore many do not fit the prescribed average.

Stage 3: Orientation to Social Valuation (Ages Nine to Thirteen). By Stage 3, our thousand children are able to think more abstractly. They recognize more occupations, because they can now conceptualize activities they cannot directly see, for instance, that people who "sit at desks, answer phones, and write things on the computer" may actually be carrying out quite different economic functions (e.g., secretaries, managers, journalists, and research analysts).

They have also become aware of status hierarchies and more sensitive to social evaluation, whether by peers or the larger society. By age nine (grade 4), youngsters start to recognize the more obvious symbols of a person's social class (clothing, speech, behavior, possessions brought to school), and by age thirteen (grade 8) most rank occupations in prestige the same way adults do. Children now array occupations two-dimensionally, by prestige level as well as sextype. Whereas they had earlier aspired to jobs low and high alike, Figure 1 illustrates that they now rank those same occupations quite differently. This shows up especially in boys' aspirations, as illustrated in Figure 1, because jobs sextyped as masculine happen to vary more in social status than do jobs typed as feminine.

Children have, in addition, come to understand the tight links among income, education, and occupation. A job's place in the occupational hierarchy affects how workers live their lives and are regarded by others, and one's chances of climbing the hierarchy depend heavily on academic accomplishment. In other words, children see that career choice enters them into a competition to get ahead, or at least make a respectable showing.

Children have therefore begun to identify floors and ceilings for their aspirations. They cease considering work that their families and communities would reject as unacceptably low in social standing, such as driving a garbage truck. Higher social class families set a higher floor (*tolerable-level boundary*) for acceptability. On the other hand, children seldom aspire to the highest level occupations. Rather, they rule out occupations that are too difficult for them to enter with reasonable effort or that pose too high a risk of failure if they try. They base this *tolerable-effort boundary* mostly on their academic ability. Years of schooling have relentlessly exposed students' differences in intellectual capability and left few with much doubt about their ability relative to classmates and their odds of educational and occupational advancement.

By the end of Stage 3, then, children have blacked out large sections of their occupational map for being the wrong sextype, unacceptably low level, or unacceptably difficult. The territory remaining in the map is the child's zone of acceptable alternatives or *social space*. Figure 2 provides two hypothetical examples, one for a middle class girl (Panel A) and one for a working class boy (Panel B). (The occupations shown are just a small sample of the common cognitive map that all groups share.) This girl, like most others, has ruled out occupations to the far left of the map as too masculine (engineer, building contractor, hardware sales, police officer), while the boy has ruled out occupations toward the right as not masculine enough (bank teller, librarian, receptionist, dental hygienist, nurse). Being middle class, the girl has also ruled out

careers in the lower third or so of the occupational hierarchy because few people in her social circle hold such jobs or consider them worthy careers. In working class neighborhoods, jobs at that level are more common and their incumbents more likely to be thought successes, so it is typical that the working class boy would extend his zone of acceptable alternatives into a lower stratum of occupations. The boy's tolerable-effort boundary may be lower than the middle class child's for two reasons. First, children from lower social class families tend not to be as academically talented as children from higher social classes. Second, they are under less pressure and have less support for aiming as high as their abilities could take them. Therefore, even though this boy may be at least as bright as the middle class girl, he may not see that his talent could open more difficult doors or why he should even make the extra effort. From his social vantage point, jobs need not be as high level to be good enough.

Figure 2 About Here

Vocational choice to this point therefore seems to be mostly a byproduct of wanting to belong, be respected, and live a comfortable life as defined by one's reference group. It is not a search for personal fulfillment on the job, but for a job that will provide a good life when not at work. The job sectors that children no longer see as appropriate for themselves become paths closed to them, at least psychologically, even when those occupations might be more congruent with their personal interests. Unless prompted to do so, the children are not likely to seek out or pay attention to information about the options they have peremptorily rejected. While circumscription greatly eases the cognitive burden of vocational choice, it can foreclose the experiences necessary for knowing whether one might, in fact, have the interest and ability for

such work. To the extent that individuals' tolerable-effort and tolerable-level boundaries reflect expectations set by their birth niche, irrespective of their own attributes, individuals are less likely to pursue alternatives as far from their origins or as close to their own interests as they might otherwise do.

Stage 4: Orientation to Internal, Unique Self (Ages Fourteen and Older). Vocational development erupts into conscious awareness during Stage 4. In earlier stages, it has consisted mostly of the pre-conscious elimination of unacceptable alternatives. Now, however, adolescents engage in an increasingly conscious search among the remainder, the occupations in their social space, for occupations that would be personally fulfilling. That is, they begin thinking about which careers would be compatible with their more personal, psychological selves.

Continued cognitive growth has enabled adolescents to apprehend better the abstract, internal, unique aspects of individuals and occupations, such as the interests, abilities, and values exercised while performing different jobs. They are therefore able to distinguish different fields of work, and know that both worker personalities and economic functions differ from one field to another. Although the distinctions captured by Holland's typology of personality and work (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional), shown in Figure 1, remain somewhat inchoate in their minds, they now become salient factors in person-job match.

The matching process has thereby become more multidimensional, which makes it more difficult. Adolescents must also begin factoring in non-vocational goals and obligations which will affect career planning. Many girls will ponder how to balance home and work life, and many boys how to generate sufficient financial support and security for a family. Moreover, many adolescents still struggle to know what their specific vocational interests, abilities, and goals are, partly because many of their vocationally-relevant personal attributes are not yet fully formed.

As discussed earlier, personal attributes that are directed toward specific cultural ends—including vocational interests, values, attitudes, and special abilities—are less formed by adolescence than are the highly general traits of ability and personality, because the former depend more on specific relevant exposure and experience that are not so universally available.

Career development becomes more difficult and anxiety provoking when our thousand adolescents are called on to make vocationally-relevant decisions, such as which courses to take and credentials or training to seek. As a result, they must now consider what workers actually do on the job, the qualifications they must possess, and how to obtain them. If prompted, most can name a most favored choice, their *idealistic aspiration*. But the occupations most attractive to them may not be the most readily available. *Realistic aspirations* are the somewhat less desirable but still acceptable occupations that individuals think they could actually get. The difference between idealistic and realistic aspirations is that the latter have been modulated by the perceived *accessibility* of occupations. Both kinds of aspirations tend to change as the adolescent learns more about how compatible and how accessible different occupations really might be. Therefore, any series of expressed aspirations, whether idealistic or realistic, is really just a sampling of the occupations from the individual's social space. Even those named spontaneously as the least acceptable tend to be drawn from—and signal—one's social space.

One risk at this stage of development is that young people have not gotten, or will not get, sufficient experience for testing their vocational interests and abilities, especially for occupations they have ejected from their social space long before. Another risk is that, owing either to external pressure or to ignorance, anxiety, or inaction on their part, they may commit themselves to a choice before they really know the options accessible to them.

Compromise

Whereas circumscription is the process by which youngsters progressively eliminate from consideration occupations they think unacceptable for themselves, *compromise* is the process by which they begin to relinquish their most preferred alternatives for less compatible but more accessible ones. When weighing the relative merits of the more attractive alternatives in one's social space, the process is called vocational *choice*. When forced to select among the minimally acceptable, choice shades into *compromise*. When forced to consider unacceptable alternatives, compromise is painful and no longer seems a matter of choice, but of barriers to choice. I focus below on three factors in the compromise process. Why do young people know so little about the accessibility of the work they prefer? How does their own behavior increase or decrease its actual accessibility? And which dimensions of person-job compatibility are they most and least willing to relinquish when they have to settle for less favored or unacceptable alternatives?

Truncated Search, Limited Knowledge. With age, children become increasingly aware of major social and psychological attributes which they then use to judge the suitability of different occupations for people like themselves. Individuals possess far less knowledge, however, about the accessibility of their preferred alternatives. Indeed, information on which jobs and training programs are actually available and how to enter them is highly specific to particular times, places, and occupations, time-consuming to locate and learn, and quickly outdated. Gathering it takes time and effort. People tend to minimize their search costs by seeking information primarily for the occupations that interest them most, only when they need to make a decision, and mostly from sources they already know and trust, such as family and friends.

While cutting search costs, this also limits the amount and kind of information that young people gather. They tend to know relatively little about the accessibility of different kinds of

postsecondary education and work, which limits their options. What they learn is fairly narrow

and contingent on the particular people and opportunities in their social circle, making them less

likely to move very far from their birth niche, even when that might suit them better.

Bigger Investment, Better Accessibility. Certain jobs simply have not existed in certain

times or places, or they have been off limits to certain categories of people. Moreover, there will

always be external circumstances, such as the health of the economy or one's family obligations,

that constrain one's ability to pursue preferred alternatives. On the other hand, one's social niche

may also provide special support which opens or reveals new opportunities: for example, well-

connected family members, well-informed compatriots, and ready access to career counseling

and information services.

Very importantly, however, one's opportunities also depend somewhat on one's own

behavior. First, as noted above, jobs and training programs are effectively inaccessible when one

remains ignorant of openings and how to apply for them. People learn more and expand their

options when they are active seekers of information, not just passive consumers of it. Second,

jobs can become more accessible when people take action to make themselves more competitive

relative to other applicants, for example, by getting relevant experience or additional training.

They further increase their opportunities when they actively mobilize support or assistance in

pursuing their aims. Seldom are opportunities laid out for us, cafeteria-like. We must often

search them out or create them ourselves. Initiative matters.

Thus, the more freedom people have in uncovering opportunities and enhancing their

competitiveness, the more that differences in personal skill, initiative, and persistence will matter

for opening up options, surmounting barriers, and reducing the need to compromise. The

partially self-generated nature of opportunity and constraint is suggested, as mentioned earlier,

by the moderate heritability of social support and life events. Individuals who just sit and wait for opportunity to knock are less likely to ever get the knock, and they abdicate much opportunity for directing their own development.

The Good Enough, or Not Too Bad. People look for compatible jobs from among those that seem accessible, or could be made so. Compatibility rests on people finding jobs that provide a good match with the sextype, level, and field of work they prefer. They seek good matches, not the best possible, because the "good enough" is sufficient, easier to determine, and more feasible to locate.

When good matches are not available, individuals must decide which dimensions of match to relinquish. The dimensions closest to the core of the self-concept seem to be relinquished last. These are also the earliest dimensions of match, with sextype being first, prestige level second, and field of work (clerical, scientific, artistic, etc.) last. When faced with options that are all unacceptable in either sextype, level, or field, those of acceptable sextype (i.e., not outside the tolerable sextype boundary) will therefore tend to be preferred over those that are not. When all available alternatives are at least minimally acceptable in sextype, people will usually opt for an acceptable level of work rather than their most preferred field of work. Only when both sextype and prestige level are minimally acceptable (i.e., the occupations are within their social space) will individuals opt to maximize fit with their vocational interests rather than further enhancing prestige level or sextype.

Stated in reverse, individuals will pick a job from their social space that fits their vocational interests, if any is accessible. If not, they will shift to a different line of work rather than seek the same type of work outside their social space, that is, one of unacceptable prestige or sextype. People will look outside their social space only when they see no accessible options

within it. In such cases, they will push their tolerable-level boundary further out than they will

their tolerable-sextype boundary. For example, if the girl in Figure 2 is unable to implement any

of the alternatives in her social space, she is more likely to entertain lower prestige work as a

receptionist or teller than more masculine work (engineer, pharmacist) that is comparable in level

to her idealistic aspiration (librarian). Likewise, if the working class boy is unable to become a

police officer or mechanic, he is more likely to compromise by seeking to be a construction

worker or sales representative than to take an office job. Both youngsters are perhaps

compromising more than they need to, either because they needlessly circumscribed their

choices at an earlier age or because they lack knowledge about the opportunities potentially

available to them.

Individuals differ greatly in the personal traits that encourage exploration, optimism, and

persistence, especially in the face of opposition and defeat, but all individuals have it within their

power to improve their options. In short, the compromise process is another crucible of self-

creation, whether through our action or inaction.

Empirical Support

The circumscription and compromise theory was derived from synthesizing evidence

across a variety of disciplines, primarily vocational assessment, career choice, job performance,

status attainment (sociology), mental ability, and behavior genetics. The empirical support for its

specific processes and stages is provided in the original statement of the theory, two revisions,

and related articles (Gottfredson, 1981, 1986, 1996, 1999, 2002; Gottfredson & Lapan, 1997).

The founding evidence for different aspects of the theory varies in amount and quality,

ranging from the much replicated and meta-analyzed (patterns of vocational interests and

aspirations, cognitive growth and diversity, heritability of behavior, and social inequalities) to

the sparsely reported (priorities in circumscription and compromise). It is the latter elements of the theory which have received the most attention in subsequent tests of the theory (see Gottfredson, 1996, 2002; Vandiver & Bowman, 1996, for reviews). Some researchers have claimed to confirm the theory (mostly with regard to circumscription) and others to disconfirm it (mostly with regard to compromise). These tests have not been very informative one way or the other, however, because they tend not to assess well, if at all, individuals' self-designated social spaces. In order to trace either circumscription or compromise, it is essential to know which occupations, sampled from the full range of work, individuals consider unacceptable vs. acceptable.

The validity of theories or their specific parts are most effectively assessed when they make *falsifiable* predictions. They receive their strongest support when they suggest novel, *non-obvious* predictions that are subsequently confirmed. Their utility relative to competing theories can be judged by confronting them head-to-head where they make *different* predictions about the same phenomenon, say, which interventions will be most effective and why.

For instance, my theory predicts that career interventions will effect more change when they target narrow, specific attributes rather than highly general ones. In contrast, social learning theory (Krumboltz, 1994) would seem to predict no difference in the effectiveness of teaching general vs. specific vocational interests, skills, and attitudes, or perhaps even that teaching the former would be more effective precisely they are more broadly generalizable. To take another example, to the extent that assessed self-efficacy is malleable, my theory predicts that improving it will depend on improving actual competence; to the extent that it is stable, the measures in question will be tapping an enduring *personality* trait, specifically, positive affect. In contrast, sociocognitive process theory (Lent & Hackett, 1994) appears to conceive self-efficacy as an

attribute that can be directly raised without first improving competence but which, after enhancement, will lead individuals to develop more such competence. Were these and other such theoretical contests to be held, not only could they profile the strengths and weaknesses of different theories, but also guide intervention strategies.

THE PRACTICAL CHALLENGE

What use, then, can career counselors make of the circumscription and compromise theory? What might it suggest for promoting the future work satisfaction and satisfactoriness of our thousand newborns? While the theory seeks to explain demographic patterns in career development, its purpose is to help individual persons, whether singly or in groups. This is the traditional aim of career counseling: to help individuals clarify and implement their visions of a satisfying career life, even if parents or social engineers might prefer something different.

The theory shares many assumptions with other vocational theories (Gottfredson, 1981), so it leads to many of the same recommendations. But it also highlights special challenges that require mobilizing old tools in new ways. For instance, how can we help clients identify genetic resources and constraints that we can never directly observe? How can we help adolescents reexamine the merits of childhood choices they now take for granted, but without seeming to denigrate them? How can we encourage realism in vocational options without quashing hope and opportunity? And how can we provide clients the complex information they need for identifying and implementing good choices without overwhelming them?

Moreover, we lack much evidence about which kinds of career interventions are most effective. There is meta-analytic evidence, however, indicating that interventions are more effective when they require sustained personal reflection and engagement (written exercises); help build a support network; and provide individualized feedback, information about the world

of work, and real-life models of effective career-related behavior (Brown & Ryan Krane, 2000).

The career guidance and counseling system outlined below therefore emphasizes these features.

APPLYING THE THEORY: OBJECTIVES, STRATEGIES, AND TOOLS

Each of the theory's four developmental processes poses special risks and points to a

particular class of counselee behaviors that can be optimized to reduce those risks and enhance

development. As indicated in Table 1, cognitive growth points to effective learning; self-

creation, to adequate experience; circumscription, to self-insight; and compromise, to wise self-

investment. Two counselor strategies are provided below for each of the four behaviors to be

optimized. I discuss each strategy's application with students from three age ranges

corresponding roughly to Stages 2-4 of the theory: elementary, middle, and high school/college.

Different interventions are appropriate for the different ages, so cells 1-9 in the table sample the

sorts of activities and resources that are useful for each stage of development. Counselors will

want to consider others too (e.g., Niles & Harris-Bowlsbey, 2002; Zunker, 1998).

Table 1 About Here

Effective learning (cells 1-3) and adequate experience (cells 4-6) are important at all ages

because they are the foundation for self-insight and wise self-investment. Self-insight is best

addressed beginning in middle/junior high school, when children have developed more capacity

for it (cells 7-8). Self-insight is essential, in turn, for wise self-investment, which should be

stressed beginning in senior high school, when the need for making and implementing decisions

becomes urgent (cell 9). Table 1 is, essentially, a guide for compiling and deploying a

comprehensive counseling and guidance toolkit for different developmental ages.

The theory suggests that effective career counseling will provide not only coaching in life-long self-development and self-agency but also "problem-solving consultants" (Savickas, 1996, p. 191). For reasons of space, I focus here on the system's use in enhancing development and preventing problems during the school years. I limit discussion of its use for diagnosis and treatment in adolescence and beyond (Gottfredson, 2002) to indicating where my eight strategies coincide with the six "questions" in Savickas' (1996) framework for solving career problems.

<u>Optimize Learning</u>

The major risk that youth face in the cognitive development process is failing to develop adequate knowledge for sound decision making because the cognitive demands for acquiring and integrating it are so high. This leads, in turn, to undue circumscription and compromise—to constricted opportunity. The practical challenge this poses for counselors is therefore: How can they optimize counselees' learning and use of complex information, in complex environments, when making career life decisions?

Vocational counseling psychology has always put a high premium on developing and conveying information about self and work. What the cognitive growth process points up, however, is that information and instruction must be kept commensurate with counselees' cognitive capabilities. Attaining commensurability requires appreciating not just that children grow in mental age as they mature, but also that tasks differ greatly in their cognitive complexity and that individuals of the same chronological age differ enormously in mental age. Cognitive differences among both tasks and individuals influence the effectiveness of counseling interventions. Roselle and Hummel (1988) found, for example, that less intellectually able college students used the computerized guidance system DISCOVER II less effectively and appeared to need more structure and discussion with the counselor.

Figure 3 helps illustrate two strategies for dealing with these cognitive constraints.

Figure 3 About Here

A. Reduce Task Complexity. The Y-axis in Figure 3 represents differences in task complexity. Cognitive demands are greater when the information to be processed is more voluminous, abstract, multifaceted, ambiguous, uncertain, changing, novel, and embedded in extraneous material. Information processing is also more demanding when it requires more inferences, dealing with conflicting tasks and unclear means-ends relations, identifying which operations to use, and navigating other such complexities (Gottfredson, 1997; Kirsch, Jungeblut, & Mosenthal, 1994). More complex tasks are more difficult to learn and perform well than are simpler tasks, and thus pose a particular challenge in guidance.

The X-axis represents the cognitive differences among children, specifically, in their mental age. As children advance in chronological age, they also grow in mental age (until late adolescence or their early twenties). They thus become able to perform progressively more complex cognitive tasks, as described earlier. The diagonal line stands for the level of task complexity that is best suited, pedagogically, to individuals of different mental ages. To illustrate, the A and C in Figure 3 represent individuals confronted with tasks that are, respectively, much too difficult and much too low level to facilitate development. Perhaps person C (mental age 15) has been asked to explain the concept of life goals and person A (mental age 9) to balance conflicting ones. B and D, in contrast, are persons presented with different tasks but ones commensurate with their (different) abilities (mental ages 12 and 18). These two individuals

will learn more from tackling their ability-congruent tasks than will A and C from their ability-mismatched exercises.

Counselors cannot raise anyone's mental age (general intelligence level) because no such technologies exist, but they can adjust the cognitive demands of the assistance they provide and offer additional cognitive support when task complexity cannot be reduced. Career information and activities are often inherently complex, such as locating job opportunities and integrating goals to create a career life plan. Career libraries, job banks, typologies of occupations grouped by similarity and difference, and instruction in decision-making strategies are among the many ways long used to reduce the cognitive burden on counselees. Another way to reduce that burden is to provide cognitive scaffolding for accomplishing complex tasks, for example, by breaking tasks such as identifying interests and making decisions into smaller steps, sequencing them across grade levels in an age-appropriate manner, and making the process more concrete and experiential. The lists of behavioral objectives for each grade level in comprehensive K-12 career guidance programs illustrate this principle, perhaps because they are integrated with academic instruction (e.g., Gysbers & Henderson, 1994, App. A).

A careful analysis of the complexity and comprehensibility of career materials and interventions would likely reveal, however, that some of their complexity is needless. For instance, exercises may be more complicated than necessary, too abstract, or their vocabulary difficult. Health researchers have discovered this to be the case with health education materials, which tend to be written several grade levels above the reading comprehension capabilities of the average person. They have also documented that many patients fail to comply with essential treatment regimens because they do not understand prescription labels, health forms, and physicians' instructions, which failure increases their morbidity and mortality (Gottfredson,

2004). Like health care providers, counseling and guidance personnel need to verify—not presume—that their communications are being understood, because clients are loathe to volunteer that they do not understand. Service providers should also take care not to mistake lack of ability for lack of motivation.

General guidance on typical levels of cognitive competence at different grade levels can be gleaned from the National Assessments of Educational Progress (NAEP), especially in reading. The latest NAEP Trend Series data (National Center for Education Statistics, 2000) show that the average American 9-year-old is just becoming able to locate facts and draw inferences from simple written material (mean NAEP reading score of 212); at age 13, the average child is starting to identify facts in lengthy material and to identify main ideas and draw inferences from passages in literature, science, and social studies (mean of 260); and typical 17-year-olds are on the threshold of (but not yet) understanding complicated passages in their school subjects and analyzing and integrating less familiar material (mean of 288). Cells 1-3 in Table 1 summarize the task complexity level that is appropriate for the average student at each of three broad levels of schooling. They guide the selection of counseling tools for optimizing the three other key behaviors (cells 4-9).

B. Accommodate Cognitive Diversity. Many children are not average, of course, but years behind or ahead of their age-mates in cognitive ability. Consider, for example, that the average NAEP reading gap between 9- and 17-year-olds, 76 points on a scale of 0-500, is comparable to the range of scores spanned by the middle two-thirds of students *within* both these age groups (roughly a 2-SD within-age difference). This 76-point mean age difference is also comparable to the reading gap between the 25th and 90th percentiles within all three NAEP age groups, which gaps are, respectively, 185 to 259, 234 to 308, and 261 to 341 for students aged 9,

13, and 17 (National Center for Education Statistics, 2000). Note also that the top 10% of 9-year-olds already reads at the 25th percentile for 17-year-olds despite being eight years younger. So does the average 13-year-old (mean score of 260), despite having four fewer years of schooling. Clearly, materials that are ability-commensurate for the average individual will not be effective for the many who are markedly more able or less able than their age-peers. Virtually any school cohort of 13-year-olds will span the entire nine-year mental-age range depicted in Figure 3. The range will be higher and narrower among college students but still wide.

One-size-fits-all instruction and assistance works no better in career education than in academic, health, or other kinds of education. As documented in both military training and the public schools, less able individuals learn better when the material to be learned is simple, concrete, non-theoretical, complete, step-by-step, highly structured, repetitive, one-on-one, and involves hands-on activities rather than book learning (Snow, 1996; Sticht, Armstrong, Hickey, & Caylor, 1987). However, this kind of instruction impedes learning among more cognitively able individuals, who learn best when material is more theoretical, not so atomized and pre-structured, and allows them to reorganize and assimilate information in their own way.

This finding explains why it is so difficult to provide effective group instruction to cognitively diverse individuals. What helps some students will fail to help—or will stifle—others in the group. While school teachers can accommodate less able students by omitting or delaying introduction of the most complex tasks in a curriculum (say, algebra), the obligations of imminent adulthood (finding a job) afford counselors and their clients no such luxury. Moreover, those obligations come all the earlier for struggling students, because they are more apt to leave school early or not seek postsecondary education. Such students can be provided assistance in a simpler, more concrete, experiential format with additional cognitive scaffolding. They have

difficulty generalizing what they learn to new situations, but most can readily learn domain-specific skills and practical knowledge with sufficient practice. Hands-on experience is an important teacher also because, as discussed next, no guidance program can teach the intimate personal knowledge to which only the individual is privy.

Optimize Experience

The major risk for youth in the self-creation process is failing to experience a varied enough set of activities, whether directly or vicariously, to develop and know their career-relevant personal traits, particularly their vocational interest and aptitude profiles. As described earlier, people's most general traits of ability and personality are consolidated and known to them via engaging the world in daily life. Designated as P in Figure 4, these traits appear to require only universally-available experience to emerge. People's more culture- and occupation-specific trait constellations, skills, habits, and attitudes are developed and known, however, only via involvement in relevant, non-universal activities, precisely because they are domain-specific and culture-bound. These are the traits (P-E in Figure 4) that embed a person in the culture, and vice versa. The practical challenge that the self-creation process poses for counselors is, then: How can they increase the likelihood that young people will gain sufficient exposure and experience to know what their career potentials really are?

Figure 4 About Here

C. Provide Broad Menus of Potential Experiences. Counseling interventions cannot create vocational interests or abilities for which there is no genetic support, but they can help young people discover whether or not they possess those foundational resources. Most important,

counselors and guidance systems can provide a broad menu of possible experiences and encourage individuals to sample ones new to them. Children tend to be exposed to somewhat different occupations depending on their birth niche, so systematically exposing all students, from kindergarten on, to all sectors of the common cognitive map of occupations (Figure 2) helps to broaden their horizons. In addition, because children tend to ignore information about sectors of work they deem unacceptable, exposing them to the demographic diversity of individuals in those different sectors of work can help to break down self-limiting stereotypes about race, gender, and class.

Many young people will continue to make career choices partly on the basis of gender, race, and social class background, but systematic exposure to occupational alternatives and nonstereotypic workers can reduce their unthinking reliance on such criteria. Reliance on social attributes can also be reduced by alerting students to more pertinent bases for choice, namely, the abilities and interests that different occupations require and reward. Students should therefore be provided vicarious or direct experience from an early age in all major forms of work activity: dealing with data, people, and things. How can such guided exposure and experience be achieved at each developmental stage?

In the early elementary years (cell 4 in Table 1), field trips, videos, guest speakers, career days, job experience kits, school projects, regular class assignments, and the like can show students (or remind them of) the great variety of occupations. Such tools can also acquaint young children with the most general features of work: what workers do on jobs, how they get them, the kinds of settings they work in, why they work, and how their jobs affect their personal lives as well as the economy. Children in the early elementary grades orient most to the sextype of work and do not yet grasp the relevance of interests and abilities. Guidance systems neither can nor

should instruct students that sextyped choices are wrong or less worthy, but they can help keep children's sextype boundaries fluid by providing concrete counter-stereotypic examples. Some children will resonate to live models of nontraditional career choice (female firefighters and male nurses) and others may at least stop ridiculing such options. Providing both sexes simple experience in dealing with data, people, and things may further inhibit reflexive narrowing of occupational aspirations according to the gender of workers rather than the work they perform.

Guidance activities should be commensurate with young children's mental capabilities: short, elemental, discrete, and concrete. They should also allow personal contact and hands-on participation to the extent possible. For example, observing and speaking with workers in cross-gender jobs will leave a much stronger impression than merely hearing that such people exist. Inferences and connections between ideas must also remain simple and obvious. Children in the early grades have limited capacity for reflecting on and integrating their experience, so multi-year personal portfolios can be used to record growth and experience for review at older ages. Creating such portfolios can also make career-related exposure seem more salient and reinforce learning.

By middle school (cell 5), children are able to participate in a greater variety of in-class, extracurricular, and at-home activities (e.g., service projects, sports, hobbies, family outings). These activities create new opportunities for students to gauge their facility and satisfaction in working with data, people, and things. Academic classwork already provides good testing grounds for aptness with data and ideas (reasoning, reading, writing, math, and clerical skills), but schools provide only haphazard opportunities for working with people (e.g., leadership, social skills) and yet fewer for working with things (spatial-mechanical skills). Experimentation

in working with people and things need not be extensive, but it is especially important for non-college-bound students.

Because they are now more cognitively able, middle/junior high school students can be asked to deal with somewhat more abstract information and, moreover, to do so in written exercises. Vicarious experience can be gained, for example, by analyzing work and workers portrayed in novels, biographies, and films. To remain effectively experiential, however, such tasks must provide highly personal involvement and individualized feedback. That is, they must be sufficiently engaging to activate and test students' natural proclivities (P traits) and discover which particular domains of cultural activity attract or repel them most (the P-E trait constellations).

Once again, attention to the pertinent bases for career choice can help forestall undue circumscription. At this age, circumscription involves eliminating options that are either too low level or too difficult. However, children may set their tolerable-level boundaries too high or their tolerable-effort boundaries too low relative to their actual abilities. Some will mistake lack of experience for lack of talent. Some will overestimate their intelligence and others, especially girls, will underestimate it. All are too young, however, for clear profiles of abilities and interests to have emerged. Guided experience in working with data, people, and things at different levels can, however, keep some middle school students from ruling out options that actually might be especially fitting and feasible for them.

As students enter high school (cell 6), part-time jobs, community service, extern and intern opportunities, job shadowing, and the like provide additional valuable experience. They function like job previews, whereby students can discover first-hand the work activities they actually do and do not like and which aptitudes they might have. College students can likewise

benefit from sampling different extracurricular activities and academic courses, including service learning. Only by directly experiencing different forms of endeavor can they know rather than merely imagine which ones they would like, dislike, have or not have a knack for. Experience often teaches students what they do not like and would never want to do. They may need to be reassured that such experience is valuable precisely for that reason and is not wasted.

Experience is authentic self-assessment of a sort that no formal assessment can ever provide. Vocational interest inventories, for instance, can only register the trait constellations that experience has already evoked and begun to consolidate.

D. Promote Self-Agency in Shaping One's Own Experience. Few young people realize the degree to which they direct their own development by daily engaging in some activities rather than others and assuming some roles rather than others. All people, no matter what their genetic and environmental constraints, have the power to mitigate or improve their conditions at all stages of life. That power rests, however, on the active but wise exercise of personal agency.

Counselors can provide experiential lessons in recognizing and beneficially exploiting self-agency. The aforementioned activities for imparting experiential knowledge about self and work can be designed to provide practice in personal agency at the same time. For instance, guidance programs can, in small steps, help elementary and middle school students project themselves into the future, imagine alternative futures, identify their effects on others, and gradually become acquainted with setting and pursuing goals. Such efforts can prime young people to accept rather than avoid developmental tasks and to see themselves as responsible actors rather than passive targets of influence.

Hands-on experience can also help students augment their repertoire of life skills. This, in turn, builds self-confidence because demonstrated competence is the firmest foundation of self-

efficacy. It may also help them face the life challenges to come by providing exercises in anticipatory coping (Lazarus, 1980). In short, providing practice in self-agency has the potential to cultivate it as an expectation and habit. People differ greatly in their natural tendency to exercise it, however. Persons with generally negative affect (depressive, pessimistic, etc.) will need more experience and support, even to accept that they possess any control over their lives.

Problems in recognizing and wisely exercising self-agency seem to be addressed by the "career education" and "career therapy" questions in Savickas' (1996) framework, because both address problems in personal agency: How do I shape my career? How can work help me grow as a person?

Optimize Self-Insight

Formulating career choices that are compatible with one's goals, interests, and abilities depends on one knowing what the latter are and identifying careers that actually fit them. As just noted, the major risk for young people when narrowing or circumscribing their choices is prematurely foreclosing good options and otherwise stunting their development for lack of self-knowledge. Experience does not automatically result in insight, so the practical challenge for counselors is: How can they help counselees to gain insight from their previous behavior and experience, and then to conceptualize a future career life that is both fitting and feasible for them?

E. Promote an Inventory and Integration of Information About Self. Counselors can elicit and help counselees take stock of what they already know or can demonstrate about themselves. Figure 4, introduced earlier, shows the three types of self-knowledge to be sought: one's highly stable general traits of personality and ability (P); one's more domain-specific, more malleable attributes such as goals, attitudes, interests, skills, habits, and beliefs (P-E); and the external

opportunities, expectations, support, and obligations one has created or evoked for oneself (E-P, or extended phenotype).

By middle/junior high school (cell 7), students have become capable of cataloguing their more obvious personal attributes and of making simple generalizations about themselves, others, and jobs. They already have a store of experience to reflect on, especially if they have been exposed (or exposed themselves) to varied activities. Exercises requiring them to review that experience can help them discern the consistencies in their behavior, including patterns in their choice of activities and friends, reactions to events, and effects on others. Having them identify their major strengths and weaknesses, likes and dislikes, hopes and fears, accomplishments and goals can also help them recognize that they do, in fact, have enduring traits and potentials to develop (and perhaps proclivities to suppress). These exercises can therefore help students understand that they have an internal unique self, even if they cannot yet see it clearly. They can also teach that such attributes—the differences among individuals *within* a gender, race, or class, not the differences *between* groups—are most pertinent in career choice.

Middle school students still define themselves largely by their social attributes, however, and therefore still conceive the compatibility of careers largely on that basis. It is thus a good time to have them look at which sorts of occupations they have excluded from their self-designated social space. Structured exercises can expose students' tolerable sextype, prestige, and effort boundaries by asking them to rate the compatibility of occupations sampled from all major sectors of work (e.g., Gottfredson & Lapan, 1997; Lapan, Adams, Turner, & Hinkelman, 2000; Turner & Lapan, this volume). Their spontaneously generated likes and dislikes will not be sufficient for exposing these boundaries. Having students then explain why they have rejected the occupations they have can reveal beliefs they take for granted but perhaps should not, such as

that people with their social attributes (gender, class, religion, etc.) "don't do" that type of work. For example, the hypothetical girl in Figure 2 might find that her interests and abilities are actually compatible with being a journalist, an option that she may have ejected from her social space years before because she had wrongly assumed that it was too difficult or otherwise out of reach for her.

A review of options rejected as too high or too low can also reveal two potential birth-niche problems: under-aspiration and the effort-ability squeeze. Children from lower class families tend to be brighter than their parents, but they do not aspire to commensurately more prestigious occupations. Jobs below their ability level are sufficient to be successful in their social circles, causing many to set unduly low tolerable-effort boundaries. Others fear estranging themselves from family and friends by moving, for example, from blue-collar backgrounds into white-collar work (Lubrano, 2003). In contrast, children of high achieving parents tend to have high aspirations, but they tend not to be as bright as their parents. Many will therefore feel compelled to seek careers that are near or beyond the limits of their capabilities; that is, their tolerable-level boundaries may bump up against their tolerable-effort boundaries. Both types of children may gain insight into their career choices and anxieties if queried why they have rejected some occupations as too low level and others as too high.

By high school (cell 8), students are both more able and more eager to know their unique internal selves. Self-insight can be fostered by having adolescents generate and review four types of career-related information about themselves: their current abilities, interests, life goals, and impact on their personal environments. Many formal assessment tools are available for measuring personal traits, especially core personality and ability (P) traits and domain-specific attributes such as vocational interests and values (P-E). I am not aware of any assessments of

extended phenotypes, at least ones conceived as such, but it is nonetheless essential that young people assess the merits of the extended phenotypes they have been constructing for themselves.

Formal assessments are effective tools, but not the only ones, for uncovering proclivities and potentials. Counselors can structure other opportunities (written exercises on life goals, group discussions of past experience, etc.) to help individuals gain self-insight. Moreover, formal assessments, which deliver ready-made results as if captured by a magic eye, may not be the best means of teaching young people that they are works in progress and that they possess considerable control (and responsibility) over the form they take.

Gathering and integrating information to form an accurate self-concept coincides with Savickas' (1996) "career counseling" question: Who am I? He discusses the variety of tools for addressing such concerns.

F. Promote Sound Conception of a Fitting and Feasible Career Life. If self-insight is gained by abstracting the self from the flow of daily activities over time and place, then making fitting career life choices is akin to deciding where and how to embed that self in social life. Choosing an occupation is not just picking a job but a *career life*, that is, committing oneself to a way of life, developing a social niche, connecting oneself to the culture in some ways rather than others. Good career decision making therefore requires more than assuring that one's interests and abilities are compatible with a job's requirements and rewards. It also requires balancing occupational preferences with other life roles and obligations, current or expected. The aim of such examination is not to identify the one best career (a chimera, in any case), but to set a favorable direction and avoid big mistakes.

Middle/junior high school students (cell 7) can be introduced to such considerations by simple exercises that have them, for example, enumerate the different life roles and life choices

they observe, document that jobs in their community require different skills and reward different interests, evaluate the life decisions that literary characters or others have made, and speculate about how workers' jobs and family lives affect each other.

High school and college students (cell 8) need to start constructing tentative career plans while still in school because poor educational decisions can effectively block some paths in life. They have already ruled out many occupations as potential careers for themselves, and they now need to pick one option from their social space. A first step is to identify occupations entailing activities and rewards that would satisfy someone with their interests and then determine whether they have, or can acquire, the abilities and skills necessary to get the job and perform it well.

Vocational psychologists have developed a wide variety of computerized systems (e.g., DISCOVER, SIGI), occupational classifications (e.g., Holland's 6-category RIASEC typology), and vocational interest inventories (e.g., Strong Interest Inventory, Self-Directed Search) for matching people's interests to occupations (Gore & Hitch, this volume; Prince & Heiser, 2000; Ryan Krane, this volume). There are relatively few such tools for assessing person-job match on the basis of abilities (e.g., O*NET, 2004, http://online.onetcenter.org). However, a review of the job aptitudes literature suggests that both people and jobs can be classified in terms of general ability *level* and ability *profile* (Gottfredson, 2003). Jobs requiring only average intelligence (e.g., most crafts, clerical, sales, and protective service work) are distinguished primarily by whether they also draw on mechanical-spatial ability (mostly Holland's Realistic work), extraversion (Social and Enterprising work), or clerical speed and conscientiousness (Conventional work). (There is relatively little mid-level Artistic or Investigative work). Jobs requiring above average general intelligence (mostly college-entry jobs) are distinguished primarily by whether they require an ability profile tilted toward verbal rather than math aptitude

(law, the humanities), a tilt toward math (medicine, mathematics, the biological and social sciences), or a tilt toward math+spatial ability (engineering, hard sciences). These are not independent intelligences, but more like different "flavors" of general intelligence. As noted earlier, schools provide ample opportunity to gauge intelligence level and certain differences in profile shape (clerical, math, and verbal abilities). Special efforts must be made, however, to ascertain whether students are strong in mechanical-spatial aptitude, which tends to be higher among males.

Not all occupations that are compatible with one's interests and abilities necessarily mesh, however, with one's non-work life goals and obligations. Although there are no goal-integration algorithms comparable to the RIASEC system for matching interests with jobs, workshops and other aids can provide practice in clarifying goals, opportunities, and barriers; balancing competing goals and needs; compiling a career life plan; and so on (e.g., Zunker, 1998).

Many students become anxious and seek help when they are required to make, not just imagine, career life decisions. Counseling psychologists have therefore paid particular attention to helping individuals who are having difficulty making good career decisions, or any at all (e.g., undecided students). Helping clients develop a fitting and feasible career life plan is the "vocational guidance" question in Savickas' (1996) framework: What shall I choose?

Optimize Self-Investment

Perhaps the most difficult challenge counselees face is implementing a career choice, that is, locating and obtaining the training or job that will initiate the chosen career life. Success in doing so depends on the accessibility of the preferred option, which depends in turn on many factors in constant motion, including one's personal qualifications and liabilities, available

openings, and competition for them. The preferred career may not be a realistic choice, necessitating compromise. The risk in this process is that individuals will make unnecessary or unwise compromises because they are not aware of, or do not take, opportunities to improve the accessibility of the career lives they seek. The practical challenge for counselors is: How can they help individuals assess and increase the odds of implementing their preferred options?

G. Facilitate Appraisal of the Accessibility of Preferred Career Life. Implementing a career choice means investing oneself in efforts toward that end. Just as with any other investment, it requires committing time, effort, and material resources to locate good investment opportunities. Any investment also imposes opportunity costs, because resources are finite: investing in some things means *not* investing in others. Moreover, time and resources will be lost if poorly invested.

Appraising the accessibility of different career options is costly because the requisite information is scattered, constantly changing, multifaceted, and often hard to interpret. Job banks, occupational projections, catalogs of training programs, and placement services can reduce the cost by providing up-to-date information about openings currently or soon available in different lines of work (cell 9). The foregoing resources can also be used in assessing a client's chances of selection by providing profiles of the entry standards and competitors against which the client will be judged. Realism also requires an accounting of one's competing obligations, access to social and financial support, and personal risks and tradeoffs involved in pursuing the preferred option. How good a bet is it, *really*? Its relative merits can be judged, and prudence served, by appraising the merits of acceptable back-up or safety-net alternatives. The aim of such appraisal is to have individuals, singly or in groups, identify their constraints. It sets the stage for exploring ways they might mitigate or bypass them.

H. Promote Self-Agency in Enhancing Self, Opportunity, and Support to Implement Plans. Getting into and succeeding at one's preferred career life is rarely, if ever, a sure thing. It is therefore prudent to try to increase the odds in one's favor, especially when they are low to begin with. This requires enhancing one's qualifications, mobilizing support, or creating new opportunities for oneself.

We cannot expect to change our intelligence, temperament, and other core (P) traits, but we can learn to play to our strengths and avoid situations that bring out our flaws. Our narrower, more specific (P-E) attributes are more malleable, however. We can therefore invest in ourselves by developing new skills, beneficial habits, and strategies for coping with specific situations. The same is true of our social circumstances; some are effectively fixed but others can be changed. There is always leeway for shaping the environment, and certainly one's own life niche (extended phenotype), by creating new opportunities, generating or defying expectations, building support networks, and incurring or deflecting obligations.

For instance, an inventory of clients' strengths and weaknesses, social advantages and barriers, will identify much that they can highlight, modify, or mitigate. If not very competitive for a particular job or educational program, they can acquire relevant experience and skills training (using the tools in cell 6 of Table 1). Counselees can also become more effective applicants by learning how to write good resumes or how to dress and prepare for interviews. They can identify more job opportunities inside and outside their birth niches by consulting career centers as well as compatriots; generate additional emotional, social, and financial resources by seeking out mentors, advisors, and scholarships; gain confidence as well as contacts by getting more work experience, either paid or volunteer; and ease anxieties by developing contingency plans.

Once again, there are large individual differences, this time in seeking out and grasping opportunity. Whereas some counselees show initiative, optimism, and energy in seeking out good options and overcoming barriers, others let circumstances govern their fate. Whereas some are quick to spot and take advantage of opportunities, others are overwhelmed by the cognitive or emotional demands involved. Counselors will need to provide more emotional and logistic support for the latter. They will also need to work with some counselees to suppress destructive or distasteful behavior, such as extreme impulsiveness, aggressiveness, hostility, or lying, by encouraging them to get skills training (change themselves directly) or avoid the experiences and settings that trigger the behavior (change their environments).

The foregoing self-investment strategies relate to Savickas' (1996) "occupational placement" question: How do I get a job? When they are used to aid persons already working, they relate to his "position coaching" question: How can I do better?

CONCLUSION

Dealing with the barriers in life is difficult. The freedom to choose can be yet more daunting, however, when stakes are high and conditions uncertain. The gift of occupational choice, albeit constrained, poses big challenges for our thousand newborns. Confused or overwhelmed, some will drift with the currents of their birth niche, thereby abdicating the opportunity and responsibility to direct their lives. Others will gradually exercise control, but too late to avoid irreversible loss of opportunity. Career counselors can help clients use their freedom to answer the challenges it poses. As outlined here, they can first help individuals avoid unnecessary, self-limiting circumscription and compromise. They can then help individuals identify and wisely invest the genetic and social resources at their disposal to fashion gratifying career lives.

REFERENCES

Ackerman, P. L., & Heggestad, E. D. (1997). Intelligence, personality, and interests: Evidence for overlapping traits. *Psychological Bulletin, 121*, 219-245.

Anderson, L. W., & Krathwohl, D. R. (Eds.) (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives.* New York: Longman.

Bergmann, C. S., Plomin, R., Pedersen, N. L., McClearn, G. E., & Neselroade, J. R. (1990). Genetic and environmental influences on social support: The Swedish Adoption/Twin Study of Aging (SATSA). *The Journals of Gerontology: Psychological Sciences, 45,* P101-P106.

Betsworth, D. G., Bouchard, T. J., Jr., Cooper, C. R., Grotevant, H. D., Hansen, J.-I. C., Scarr, S., & Weinberg, R. A. (1994). Genetic and environmental influences on vocational interests assessed using adoptive and biological families and twins reared apart and together. *Journal of Vocational Behavior, 44,* 263-278.

Bouchard, T. J., Jr., Lykken, D. T., Tellegen, A., & McGue, M. (1996). Genes, drives, environment, and experience: EPD theory revised. In C. P. Benbow & D. Lubinski (Eds.), *Intellectual talent: Psychometric and social issues* (pp. 5-43). Baltimore: Johns Hopkins University Press.

Brown, S. D., & Ryan Krane, N. E. (2000). Four (or five) sessions and a cloud of dust: Old assumptions and new observations about career counseling. In S. D. Brown & R. W. Lent (Eds.), *Handbook of Counseling Psychology* (3rd ed., pp. 740-766). New York: Wiley.

Dunn, J., & Plomin, R. (1990). *Separate lives: Why sibling are so different.* New York: Basic Books.

Gore, _., & Hitch, _. (this volume).

Gottfredson, L. S. (1981). Circumscription and compromise: A developmental theory of occupational aspirations [Monograph]. *Journal of Counseling Psychology, 28*, 545-579.

Gottfredson, L. S. (1986). Occupational aptitude patterns map: Development and implications for a theory of job aptitude requirements (Monograph). *Journal of Vocational Behavior, 29,* 254-291.

Gottfredson, L. S. (1996). Gottfredson's theory of circumscription and compromise. In D. Brown & L. Brooks (Eds.), *Career choice and development* (3rd ed., pp. 179-232). San Francisco: Jossey-Bass.

Gottfredson, L. S. (1997). Why *g* matters: The complexity of everyday life. *Intelligence, 24*, 79-132.

Gottfredson, L. S. (1999). The nature and nurture of vocational interests. In M. L. Savickas & A. R. Spokane (Eds.), *Vocational interests: Their meaning, measurement, and use in counseling* (pp. 57-85). Palo Alto, CA: Davies-Black.

Gottfredson, L. S. (2002). Gottfredson's theory of circumscription, compromise, and self-creation. In D. Brown (Ed.), *Career choice and development* (4th ed., pp. 85-148). San Francisco: Jossey-Bass.

Gottfredson, L. S. (2003). The challenge and promise of cognitive career assessment. *Journal of Career Assessment, 11,* 115-135.

Gottfredson, L. S. (2004). Intelligence: Is it the health epidemiologists' elusive "fundamental cause" of health inequalities? *Journal of Personality and Social Psychology, 86,* 174-199.

Gottfredson, L. S., & Lapan, R. (1997). Assessing gender-based circumscription of occupational aspirations. *Journal of Career Assessment, 5*, 419-441.

Gysbers, N. C., & Henderson, P. (1994). *Developing and managing your school guidance program* (2nd ed.). Alexandria, VA: American Counseling Association

Jensen, A. R. (1997). The puzzle of nongenetic variance. In R. J. Sternberg & E. Grigorenko (Eds.), *Intelligence, heredity, and environment* (pp. 42-88). New York: Cambridge University Press.

Kirsch, I. S., Jungeblut, A., & Mosenthal, P. B. (1994). *Moving towards the measurement of adult literacy.* Paper presented at the March NCES meeting, Washington, DC.

Krumboltz, J. D. (1994). Improving career development theory from a social learning perspective. In M. L. Savickas & R. W. Lent (Eds.), *Convergence in career development theories: Implications for science and practice* (pp. 9-31). Palo Alto, CA: Consulting Psychologists Press.

Lapan, R. T., Adams, A., Turner, S., & Hinkelman, J. M. (2000). Seventh graders' vocational interest and efficacy expectation patterns. *Journal of Career Development, 26,* 215-229.

Lazarus, R. S. (1980). The stress and coping paradigm. In L. A. Bond & J. C. Rosen (Eds.), *Primary prevention of psychopathology: Vol. 4. Competence and coping in adulthood* (pp.   ). Hanover, NH: University Press of New England.

Lent, R., W., & Hackett, G. (1994). Sociocognitive mechanisms of personal agency in career development. In M. L. Savickas & R. W. Lent (Eds.), *Convergence in career development theories: Implications for science and practice* (pp. 77-101). Palo Alto, CA: Consulting Psychologists Press.

Loehlin, J. C. (1992). *Genes and environment in personality development.* Thousand Oaks, CA: Sage.

Lubrano, A. (2003). *Limbo: Blue-collar roots, white-collar dreams.* New York: Wiley.

Lyons, M. J., Goldberg, J., Eisen, S. A., True, W., Tsuang, M. T., Meyer, J. M., & Henderson, W. G. (1993). Do genes influence exposure to trauma: A twin study of combat. *American Journal of Medical Genetics (Neuropsychiatric Genetics), 48,* 22-27.

National Center for Education Statistics (2000, August). *Results over time - NAEP 1999 long-term trend summary data tables.* <http://nces.ed.gov/nationsreportcard/tables/Ltt1999/>

Niles, S. G., & Harris-Bowlsbey, J. (2002). *Career development interventions in the 21st century.* Upper Saddle River, NJ: Merrill Prentice Hall.

Plomin, R., & Bergmann, C. S. (1991). The nature of nurture: Genetic influence on "environmental" measures. *Behavioral and Brain Sciences, 14,* 373-427.

Plomin, R., DeFries, J. D., McClearn, J. E., & McGuffin, P. (2001). *Behavioral genetics* (4th ed.). New York: Worth.

Plomin, R., Lichtenstein, P., Pedersen, N. L., McClearn, G. E., & Nesselroade, J. R. (1990). Genetic influence on life events during the last half of the life span. *Psychology and Aging, 5*, 25-30.

Plomin, R., & Petrill, S. A. (1997). Genetics and intelligence: What's new? *Intelligence, 24,* 53-77.

Prince, J. P., & Heiser, L. J. (2000). *Essentials of career interest assessment.* New York: Wiley.

Roselle, B., & Hummel, T. (1988). Intellectual development and interaction effectiveness with DISCOVER. *The Career Development Journal, 35-36*, 241-251.

Rowe, D. C. (1994). *The limits of family influence: Genes, experience, and behavior.* New York: Guilford Press.

Rowe, D. C., Vesterdal, W. J., & Rodgers, J. L. (1998). Herrnstein's syllogism: Genetic and shared environmental influences on IQ, education, and income. *Intelligence, 26*, 405-423.

Ryan Krane, N. E. (this volume).

Savickas, M. L. (1996). A framework for linking career theory and practice. In M. L. Savickas & W. Bruce Walsh (Eds.), *Handbook of career counseling theory and practice* (pp. 191-208). Palo Alto, CA: Davies-Black.

Scarr, S., & McCartney, K. (1983). How people make their own environments: A theory of genotype ➔ environment effects. *Child Development, 54,* 424-435.

Snow, R. E. (1996). Aptitude development and education. *Psychology, Public Policy, and Law, 2,* 536-560.

Sticht, T. G., Armstrong, W. B., Hickey, D T., & Caylor, J. S. (1987). *Cast-off youth: Policy and training methods from the military experience.* New York: Praeger.

Tesser, A. (1993). The importance of heritability in psychological research: The case of attitudes. *Psychological Review, 100,* 129-142.

Turner, S., & Lapan, R. T. (this volume).

United States Census Office (1902). *Abstract of The Twelfth Census of the United States, 1900.* Washington, DC: Government Printing Office.

U. S. Census Bureau (2002). *Statistical abstract of the United States: 2002.* Washington, DC: U. S. Department of Commerce, Economics and Statistics Administration, U. S. Census Bureau.

Vandiver, B. J., & Bowman, S. L. (1996). A schematic reconceptualization and application of Gottfredson's model. In M. L. Savickas & W. B. Walsh (Eds.), *Handbook of career counseling theory and practice* (pp. 155-168). Palo Alto, CA: Davies-Black.

Zunker, V. G. (1998). *Career counseling: Applied concepts of life planning* (5th ed.). New

York: Brooks/Cole.

FIGURE CAPTIONS

Figure 1: Four stages in the circumscription of vocational aspirations. Note: R=Realistic, I=Investigative, A=Artistic, S=Social, E=Enterprising, C=Conventional

Figure 2: Two hypothetical children's self-defined social spaces within the cognitive map of occupations shared by all adults.
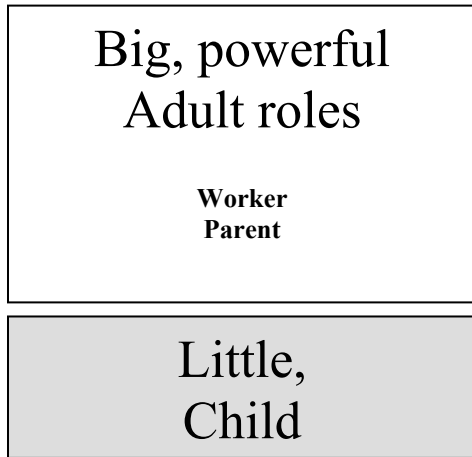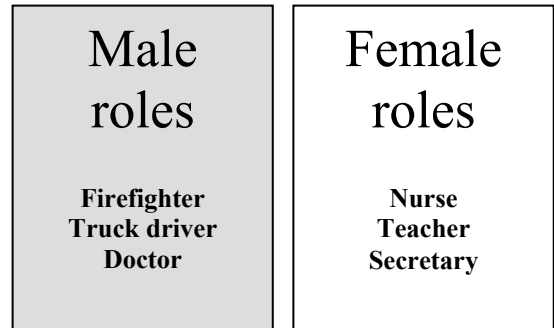
    Panel A: Middle class girl

    Panel B: Working class boy

Figure 3: Two variables that influence the cognitive suitability of counseling interventions

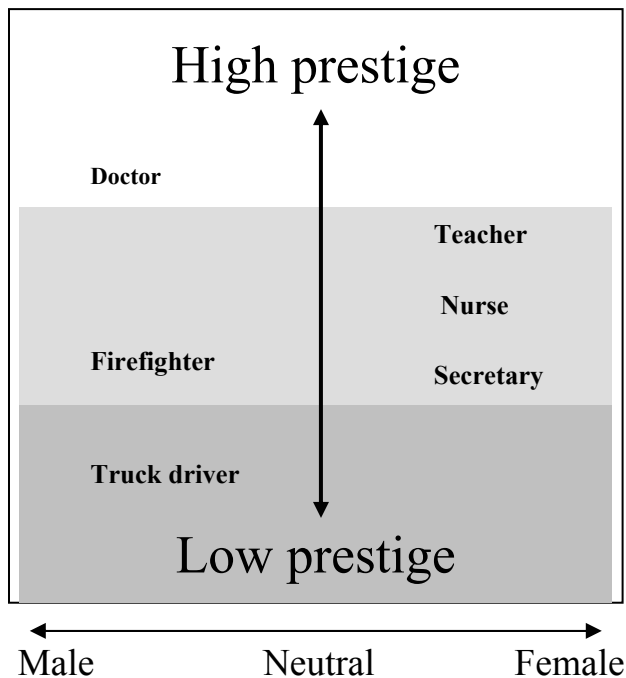Figure 4: Three classes of personal attributes of persons in environments
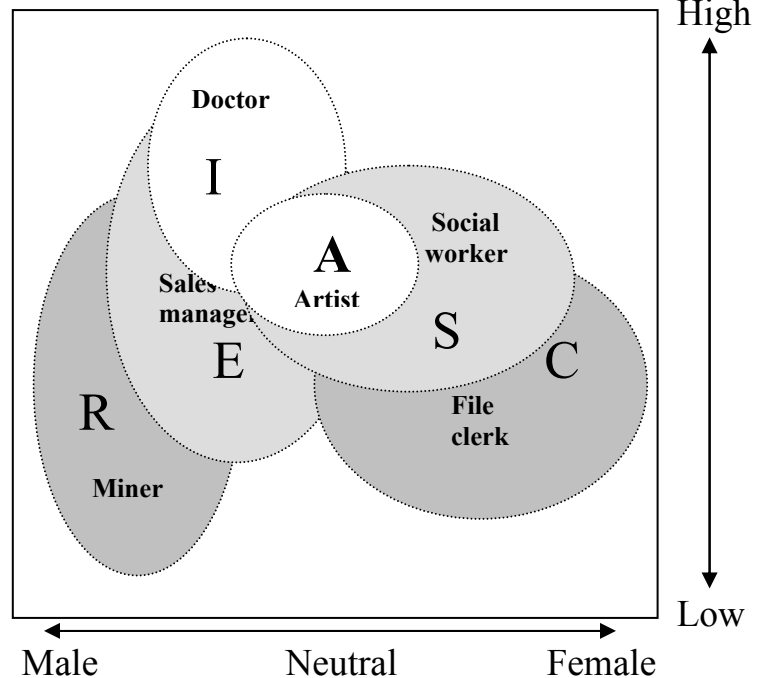
Stage 1:
Size and Power
(preschool)

Big, powerful
Adult roles

**Worker
Parent**

Little,
Child

Stage 2:
Sex Roles
(elementary school)

Male
roles

**Firefighter
Truck driver
Doctor**

Female
roles

**Nurse
Teacher
Secretary**

Stage 3:
Social valuation
(middle school)

High prestige

Doctor

Teacher

Nurse

Firefighter

Secretary

Truck driver

Low prestige

Male   Neutral   Female

Stage 4:
Internal, unique self
(high school and beyond)

High

Doctor

I

**Social
worker**

A
Artist

**Sales
manager**

S

E

C

R

**File
clerk**

Miner

Low

Male   Neutral   Female

High

Task Complexity

Low

Line = Optimal complexity
for mental age

A

Task
too
hard
for A

B

Task
too
easy
for C

C

D

9   12   15   18
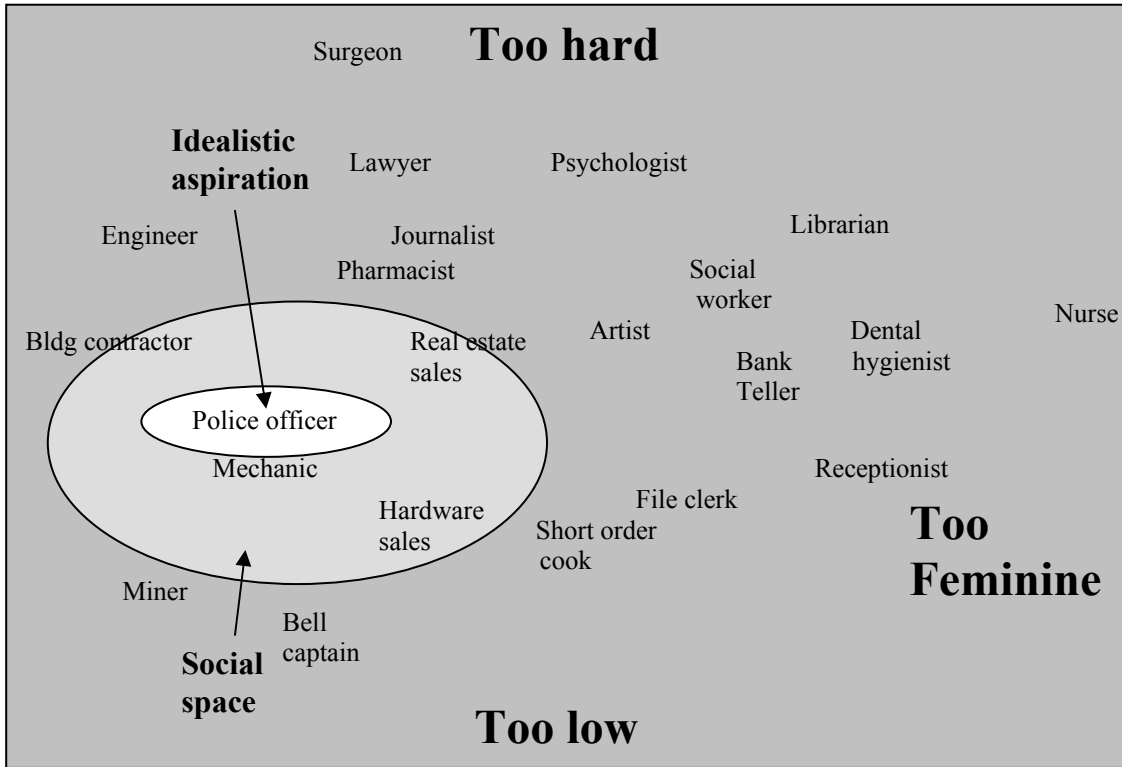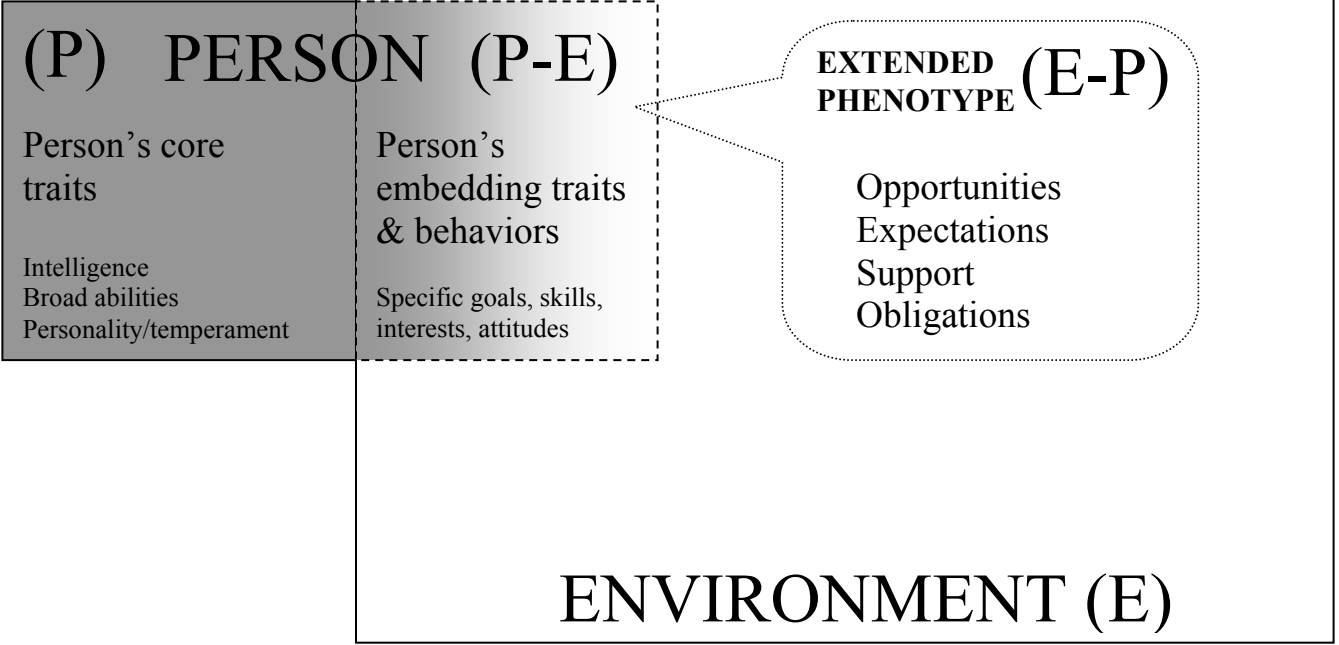
Mental Age
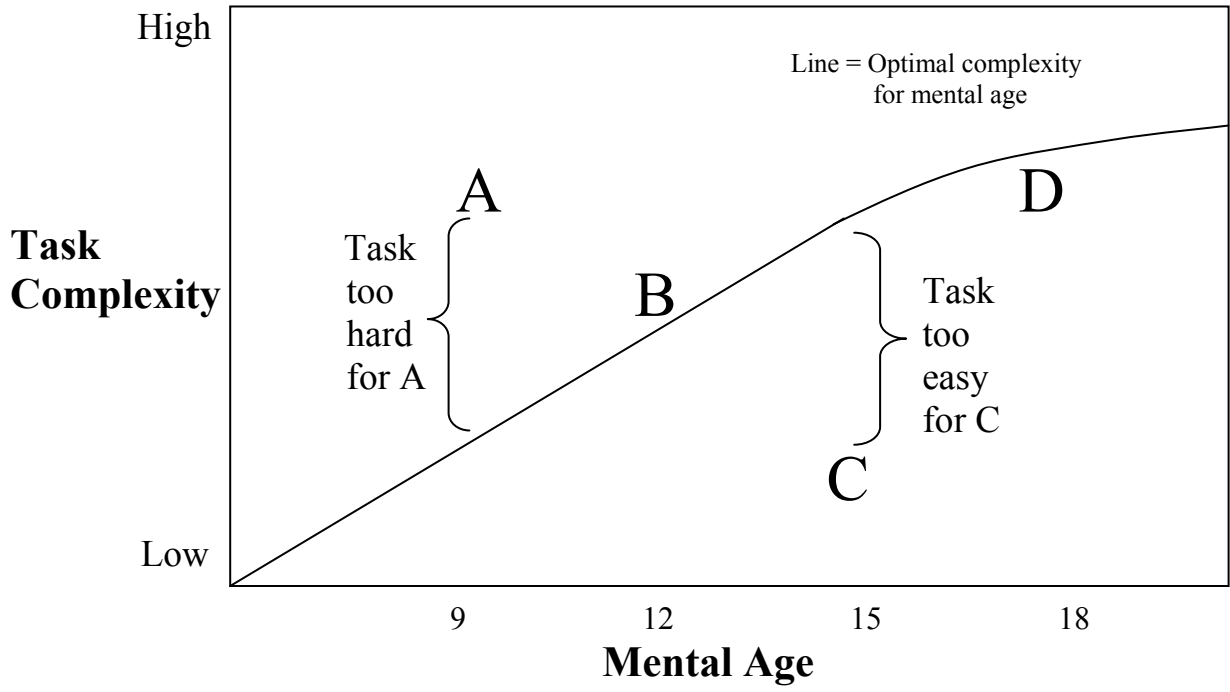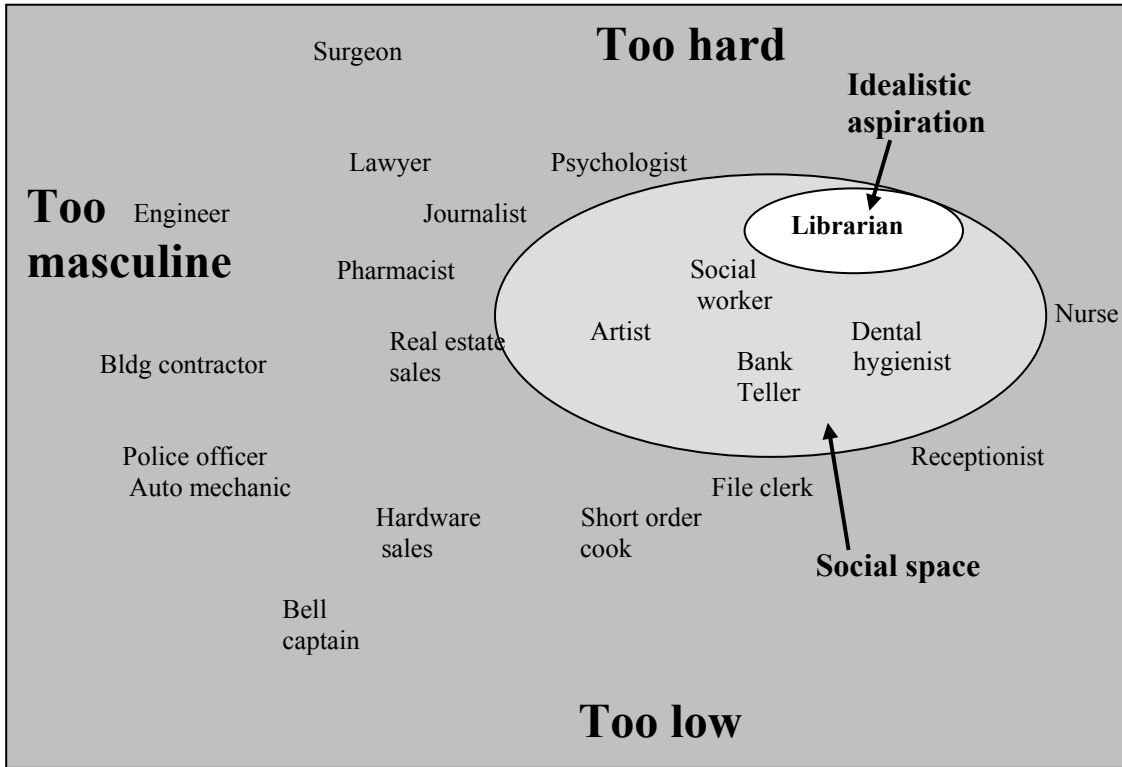
Panel A

Panel B

(P)   PERSON   (P-E)

Person's core traits

Intelligence
Broad abilities
Personality/temperament

Person's embedding traits & behaviors

Specific goals, skills, interests, attitudes

EXTENDED PHENOTYPE (E-P)

Opportunities
Expectations
Support
Obligations

ENVIRONMENT (E)

Table 1: Overview of Aims, Strategies, and Sample Tools for a Comprehensive Career Guidance and Counseling System

Devel-opmental Process	Behavior to be optimized	Counselor strategies	Sample Tools		
			Early Elementary School	Middle/Junior High School	High School & Beyond
Cognitive growth	Learning	**A:** Reduce task complexity **B:** Accommodate cognitive diversity	**1:** Information and tasks are discrete, concrete, short, and require only simple inferences (NAEP level: 150-225)	**2:** Information is lengthier; tasks require relating ideas and making generalizations (NAEP level: 200-275); low-ability students require less complex material (see Cell 1)	**3:** Information can be somewhat complicated; tasks require some analysis and integration of information (NAEP level: 250-325); low-ability students require less complex material (see Cell 2)
Self-creation	Experience	**C:** Provide broad menus of experience (intellectual, social, & things-related) **D:** Promote self-agency in shaping own experience	**4:** Field trips, career days, contact with diverse workers, experience kits, personal portfolios	**5:** Also—exemplars in novels, biographies, current affairs, & daily life; simple jobs in home or neighborhood, extracurricular activities, hobbies, scouting, school service projects; community visits	**6:** Also—broad selection of courses, community service, job shadowing, co-op, extern- and internships, tech-prep, clubs, (J)ROTC, FFA, scouting, student government, sports, construction-repair projects; summer jobs
Circum-scription	Self-Insight	**E:** Facilitate inventory and integration of information about self **F:** Promote sound conception of fitting and feasible career life		**7:** List tentative life goals, major strengths and weaknesses, family expectations, potential barriers; exercises in identifying role conflicts, job requirements, which occupations they reject and why; simple exercises in setting goals & making decisions	**8:** Formal assessments of interest, ability, personality, values; analysis of past activities, support, barriers, effects on others; computerized information on person-job match; exercises in setting and balancing career life goals
Compro-mise	Self-Investment	**G:** Facilitate assessment of accessibility of preferred career life **H:** Promote self-agency in enhancing self, opportunity, and support			**9:** Books and training in writing resumes, interviewing for jobs, skill building and anxiety management; job banks, placement services; aids for identifying best bets and backups, building support system, enlisting mentors