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# Cognitive Heuristics and Case Conceptualization: Role of Expertise

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# COGNITIVE HEURISTICS AND CASE CONCEPTUALIZATION: ROLE OF EXPERTISE

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# CHAPTER I

## INTRODUCTION

The ability of counselors to make accurate diagnostic impressions has been questioned beginning with the seminal work of Meehl (1954). In fact, computer programs utilizing simple linear models have been found to provide better judgments of a client's diagnostic picture than counselors (Goldberg, 1965). One likely reason that counselors are less accurate in their diagnostic conclusions than computers is that human decision-making is fraught with bias (Fiske & Taylor, 1984).

The manner in which these biases in decision-making involve systematic errors in information processing has been studied extensively (e.g., Kahneman & Tversky, 1972) under the heading of "cognitive heuristics." Cognitive heuristics are shortcuts in information processing that individuals use in order to simplify the problem-solving process (Kahneman & Tversky, 1972). Cognitive heuristics are necessary because they allow one to organize large amounts of information in a timely manner. However, complexity, volume, and uncertainty of presented information make an accurate judgment difficult (Fiske & Taylor, 1984). Individuals make an "adequate"

decision rather than a "rational" decision based on presented evidence and probability (March & Simon, 1958). The cognitive heuristic process often results in judgmental error (Nisbett & Ross, 1980).

After establishing the existence of cognitive heuristics as processes in human decision making (Tversky & Kahneman, 1972), additional work by Tversky and Kahneman, identified specific types of heuristics (Fiske & Taylor, 1984). The representative heuristic is associated with making inferences about the probability of an occurrence by evaluating the similarity of the presenting situation to a familiar model or prototype (Heppner & Frazier, 1992). The availability heuristic is associated with making inferences about the probability of an occurrence based on the number of examples that can be quickly recalled (Heppner & Frazier, 1992). The simulation heuristic is associated with the prediction of an outcome by constructing hypothetical scenarios using the presenting information (Fiske & Taylor, 1984). The anchoring heuristic is associated with predicting behavior based on what the individual making that prediction would do and then modifying it to fit the presenting situation (Fiske & Taylor, 1984). Metzger and Krass (1988) adapted the original items reported by Kahneman and Tversky (1982) to replicate the effects of

the representative, anchoring, and availability heuristics and confirmed these findings.

Most of the research establishing cognitive heuristics (e.g., Kahneman & Tversky, 1972) has been conducted using novice decision-makers (i.e., individuals not trained in processing social information). What about the trained social information processor? In a counseling interview the conditions are favorable for heuristic use; the counselor organizes uncertain, complex, social information into judgments about the client. Research suggests that both novice and experienced counselors are subject to errors in clinical judgment (e.g., Crawford, Humfleet, Ribordy, Ho, & Vickers, 1991). Furthermore, differences in the conceptualization of clients according to level of expertise indicate that increased knowledge and clinical experience may effect how clients are diagnosed (Hammond, 1992). Given that counselors make heuristic errors, what are the sources of bias that effect the client's diagnoses?

One potential source of bias for counselors when assessing a client's problems are those issues associated with the counselor's personal beliefs or values. One issue which has a high probability of personal relevance and increased sensitivity for counselors is sexual orientation. Due to the degree of homophobia in our society (Dupras, Levy, Samson, & Tessier, 1989),

counselors are not immune to the negative prejudices and biases our culture has inflicted upon us. This bias could affect the diagnostic interview in a number of ways because the counselor may ignore or weigh more heavily certain diagnostic signs and symptoms.

The purpose of this thesis was to explore the degree to which counselor's beliefs regarding sexual orientation may affect their diagnostic impressions of gay clients. Counselors at a high and low level of training were randomly assigned to read a case study where the client's sexual orientation (gay) was salient or not salient. After reading the vignette, the participants were asked to report their diagnostic impressions using objective criteria. It was hypothesized that experienced counselors-in-training would rate the likelihood and correspondent severity of the client having a mental illness less than novice counselors-in-training. Secondly, it was hypothesized that degree of homophobia was associated with likelihood of mental illness ratings and severity of mental illness ratings. Lastly, it was hypothesized that the likelihood and severity ratings of a client having a mental illness would be higher for the vignette which specified the male client as gay.

## CHAPTER II

## REVIEW OF THE RELEVANT LITERATURE

Is the trained professional immune to the common biases that effect how laypersons make decisions? Is expertise enough to elevate one's decision-making skills to the accuracy of statistical analysis? Research using expert decision-makers performing familiar tasks has shown that even trained professionals (i.e., lawyers) are subject to bias (Jackson, 1986). Although they are trained social information processors, counselors may make biased clinical decisions (Meehl, 1954). Personal values and pre-existing expectations can bias judgments about the client. Gender, race, and sexual orientation are particularly sensitive to biases. It would be unrealistic to expect counselors to be without personal values, beliefs, and expectations. However, counselors must recognize that they are not beyond subjectivity and consider the consequences for the client. As a helping profession, counseling should avoid any unconscious prejudice toward the client by actively researching counselors' potential for and sources of judgmental error.

## Understanding Heuristic Research

There has been criticism of cognitive heuristic research because it focuses on errors in judgment and the conceptualization of human beings as irrational thinkers (Lopes, 1991). Kahneman (1991), a pioneer of cognitive heuristics, addressed this criticism. He suggested that psychological methodology favors the study of failure in normative reasoning because it produces results, not because of a negative view of human nature. Sherman and Corty (1984) understood cognitive heuristic study within the following framework:

> "Irrationality is often a sensible decision making strategy given the subject's goals and understanding of the information. In addition, the very notion of error or irrationality implies a criterion of objective appropriateness. Such a criterion is often nonexistent for problems used in the study of heuristic use" (p. 231).

This is consistent with the assumptions of Heller, Saltzstein, and Caspe (1992). That is, heuristics may or may not lead to error, but their role in the judgment process contributes to further understanding of information processing. This framework provides the rationale behind heuristic research both past and present.

## Human Limitations and Cognitive Heuristics

Human beings are limited in their information processing capacity and do not necessarily engage in a formal analysis of information. Individuals may omit or inaccurately navigate phases of the decision-making process (Heppner & Frazier, 1992). The most important and relevant information may not be attended to, the context or sample size may be ignored, and the information may be incorrectly weighted in the integration process (Heppner & Frazier, 1992). Conscious consideration of each phase of the judgment process does not automatically take place (Baron, 1990). The "rules of thumb" employed in place of a more logical analysis have been termed cognitive heuristics (Kahneman & Tversky, 1972).

The past two decades since the inception of cognitive heuristics have resulted in a flood of research on the factors that influence heuristic error (Kahneman, 1991). Kahneman and Tversky (1973) found that individuals make errors from an overreliance on personal prototypes or models comprised of central tendency characteristics (i.e., a gay man is passive, emotional, and promiscuous, Page & Yee, 1986). Two groups of subjects were given random descriptions drawn from either of two samples, 70 lawyers and 30 engineers or 30 lawyers and 70 engineers. Despite the probability differences that a description is that of a lawyer or an engineer, there were no

differences in the likelihood ratings between the two groups. Subjects based their probability ratings on the description's likeness to a typical lawyer or engineer and ignored statistical probability in the formation of a judgment. Information frequently and/or recently received may cause the decision-maker to ignore other information not salient (Sherman & Corty, 1984). Lichtenstein, Slovic, Fischhoff, Layman, and Combs (cited in Sherman & Corty, 1984), found that subjects judged death by accident more likely than death by stroke although strokes account for 85% more deaths. They attributed this result to the frequency of accidents reported in the media versus the unreported incidence of strokes. These systematic biases have been researched in terms of "schema" and "salience" effects (Salovey and Turk, 1991). Given that human beings are limited in their information processing ability, it important to investigate their sources of error. For further understanding of the influence of schema and salience a more complete discussion is necessary.

## Self-schema

It has been suggested that the process of clinical decision-making is subject to error given the unavoidable subjectivity of clinician (Salovey & Turk, 1991). This subjectivity can be understood in terms of "self-schema." Self-schema are comprised of personal values, beliefs,

pre-existing expectations, and affective responses (Nisbett & Ross, 1980). Self-schema affect the cognitive organization of incoming social information (Fiske & Taylor, 1984). For example, degree of homophobia (self-schema) was associated with errors in recall for descriptions of three Gay Society speakers (Walker & Antaki, 1986). Subjects with a high degree of homophobia were unable to differentiate between the three homosexual speakers.

Self-schema influences how information is coded and retrieved from memory (Taylor, Fiske, Etcoff, & Ruderman, 1978). Schrauger; Swann, Griffen, Predmore and Gaines; and Swann and Read (cited in Smith & Kida, 1991) have shown that information consistent with self-schema is more frequently recalled and viewed as more credible. Wyer and Martin (1986) presented subjects with two conflicting trait-adjective descriptions: a named individual and a group member. Rated expectancies of behavior were consistent with the information, but when subjects were subsequently told that the two descriptions were of the same individual they did not change expectancies of behavior. This suggests that subjects maintained two separate cognitive representations of the same individual to protect their original conceptualization. Schema have a tendency to remain

fixed despite conflicting information (Sherman & Corty, 1984).

People make biased judgments because each person has their own beliefs, values, and expectations self-schema. Self-schema are organized categories of information. Once established, self-schema are difficult to change despite the presentation of inconsistent information. Counselors are not without self-schema and may disregard information about a client that is inconsistent with their schema.

## Salient Cues

A salient cue is information presented recently and frequently (Sherman & Corty, 1984). Functionally, salient information triggers self-schema which in turn influences judgment (Salovey & Turk, 1991). Higgens, Rholes, and Jones (cited in Sherman & Corty, 1984) had subjects read a description which first presented positive (self-confident) or negative (conceited) trait terms followed by identical ambiguous behavioral descriptions. The behaviors were viewed as positive or negative according to the particular salient cue presented. Wyer and Srull (1979, 1980) confirmed this finding and demonstrated that a salient cue first accessed a category of information and then influenced how ambiguous behaviors were evaluated. Subjects were asked to underline three hostile behaviors and construct a sentence using them. The

subjects then read an ambiguous vignette about an actor. Those who had the hostility task most recently and/or performed it more frequently rated hostile behaviors and traits about the actor more likely. In a study by Gurwitz and Dodge (1977), subjects were given a description of a fellow college student and asked to judge the likelihood that a certain trait applies to her. Describing the student as a member of a sorority (salient) with three trait confirming behaviors (i.e., she goes to great lengths to look 'just right') resulted in higher attribution of group oriented, social climbing, clothes conscious, phony, conforming, wealthy, cliquish, and snobbish traits than the same description without the word sorority (not salient).

Research studying the effects of salient cues with helping professionals has demonstrated biases similar to those found in the general populace (e.g., Katz, Parisi, Astone, McEvaddy, & Lucido, 1987). Gender, race, and sexual orientation have been particularity effective at accessing self-schema with counselors (e.g., Walker & Antaki, 1986; Taylor & Falcone, 1982). Robertson and Fitzgerald (1990) used gender roles to investigate differences in the therapist's conceptualization of the problem, diagnosis, and treatment plan between a client description consistent or non-consistent with traditional gender roles. Results suggested that the client's

problem was rated more severely when the client was portrayed in non-traditional sex-roles (i.e., house husband). Additionally, the source of problems for the client with a non-traditional gender role was more likely to be attributed to the client's marriage than the client's personal issues.

Crawford et al. (1991) presented clinical and counseling psychologists with identical vignettes of a homosexual or heterosexual, AIDS or leukemia patient. In order to investigate the effects of sexual orientation on empathy and understanding, participants rated their likelihood to accept them for treatment, to make physical contact, and to believe the client was deserving of sympathy. Multivariate analysis of variance (MANOVA) found main effects for disease and univariate F tests indicated that subjects rating an AIDS patient were less likely to accept the client, to make physical contact, and more likely to refer to another therapist. An additional MANOVA yielded main effects for level of homophobia with regard to willingness to make physical contact and interpersonal interaction with the gay client.

Salient cues are pieces of information that tap into self-schema. As a result, the subjective schema that is triggered becomes a reference for subsequent judgments. Counselors are susceptible to such salient information as

gender, race, and sexual orientation which is laden with personal values, beliefs, and expectancies. Research suggests that these particularly sensitive self-schema may influence the diagnoses and treatment of the client.

## Expertise

Defined in terms of schema, experts have greater breadth and depth of knowledge in a particular area (Gebotys & Claxton-Oldfield, 1989). Research suggests that degree of expertise effects how information is processed (e.g., Waxman, et al, 1991). Smith and Kida (1991) found that both expert and student auditors exhibited biases in judgment, but the extent and severity of biases in expert auditors were less.

Toward further understanding of the relationship between expertise and information processing, Heller, et al. (1992) studied first, second, and third year medical residents. Third year residents predisposed themselves to error by relying on cognitive heuristics more often than first or second year medical residents when making diagnoses. This was exemplified in their greater disregard for utilizing base rate information. However, more experienced residents had greater variability than first-year residents in the prototype or conceptualization of the patient as evidenced by less redundant information cited in support of the diagnoses. This suggests that experts are prone to judgmental error

as a result of increased reliance on cognitive heuristics, but access more developed schemata than those with less expertise.

Research specific to counseling has yielded results consistent with novice-expert data. Expert clinicians conceptualize clients in less distinct categories than novice clinicians (e.g., Waxman et al, 1990). Hammond (1992) confirmed this finding by asking laypersons, novices, and subexperts to diagnose clients. Laypersons and novice counselors used specific symptoms to support their diagnoses of case scenarios while subexperts cited past clinical experiences. It has been suggested that the neophyte counselor forms problem representations of clients differently than experienced counselors because of vulnerability to salient information (Dumont & Lecomte, 1987). Waxman et al. (1990) classified counseling psychologists as either novice or experts and had them "think aloud" by verbalizing preliminary and summary inferences about the client's problem areas as the case study was read. Novices were more likely to confirm initial hypotheses in the summary assessment and recall only that information which confirmed their hypotheses. In a large study (N=893) by Bernstein and Lecomte (1982) counselors, clinical social workers, and clinical psychologists confirmed that subjects at different points in training (beginning master's, ending

master's, and post-master's professional) make different judgments about clients. Subjects completed the Therapist Expectancy Inventory about a male or an identical female client. Results indicated that ending students had the highest expectancy of positive therapeutic outcomes while professional counselors had the lowest expectancy. The beginning students anticipated the offering of more interpretations than the ending students and professionals. These differences suggest that training level effects counselors' expectancies as a function of changing schemata.

It is generally agreed that increased expertise results in more accurate decision-making in a given occupation. However, experts and trainees alike are subject to biases and do not necessarily process information with the exactitude of a computer analysis. Research suggests that experts rely on their past experiences and use heuristics in clinical decision-making more than novices. Novices are susceptible to error as a result of an exaggeration of salient cues and novices rely heavily on that information which is consistent with self-schema. If trained social information processors such as counselors are subject to biases, then the profession that strives to help people should address this issue.

## Current Directions

Authors have proposed that future research investigate how counselors engage in heuristics toward further understanding of potential clinical errors (e.g., Heppner & Frazier, 1992; Nisbett & Ross, 1980). For example, Fagley (1988) cautioned school psychologists about possible errors in judgment as a function of the availability, representative, and anchoring heuristics, but no quantitative work was presented. There seems to be a concern about cognitive heuristic error, but the lack of studies specific to counselors suggest a hesitancy to quantitatively explore this area.

## Statement of Purpose and Hypothesis

Research suggests that clinical decision-making is neither free from biases nor is it necessarily logical. An understanding of a counselor's heuristics processes necessitates an understanding of self-schema which concurrently influence decision-making. Experts and novices alike are prone to subjectivity that eventually leads to judgmental errors. As a helping profession, counseling should to address the sources and effects that biases have on the client.

The purpose of this research was to investigate whether self-schema affects the diagnostic process of counselors-in-training. Specifically, counselors' sensitivity to sexual orientation was assessed with respect to the likelihood and severity that a gay client

had a mental illness. Using counselors with high and low levels of training allowed for the assessment of the effects of expertise.

Graduate counseling students with varying levels of education and clinical experience were asked to read a case study. Half the subjects read a vignette about a dysthymic, gay male client (sexual orientation as the salient cue) and the other half read an identical vignette about a male client (sexual orientation not salient). Subjects then rated the likelihood and the corresponding severity of seven defined diagnoses to indicate the degree to which the client had a mental illness. To quantify schema about gays/lesbians, participants completed a questionnaire assessing degree of homophobia. It was hypothesized that: 1) the likelihood and severity ratings that the client had a mental illness would be less for the more experienced counselors-in-training group, 2) the likelihood and severity ratings that the client had a mental illness were associated with the degree of the counselor's homophobia, and 3) the likelihood and severity ratings that the client had a mental illness would be higher for the gay male versus the male client.

Given that the predicted effects are statistically significant, intervention at the training stage of counseling would be preferable. A program that increases

awareness of biases or even counteracts the effects of heuristics could be designed. Turk and Salovey (1986) suggested that "strategies such as focusing attention on one's own cognitive processes, careful self-interrogation, generation of competing hypotheses, and careful record keeping might decrease biases in information processing" (cited in Heppner & Frazier, 1992, p. 166). A discussion of teaching techniques to minimalize error will be presented in Chapter V.

# CHAPTER III

# METHOD

## Participants

To investigate how counselors-in-training process social information, students seeking degrees in Community Counseling and Counseling Psychology were solicited. Sixty-two students signed a written consent form acknowledging their voluntary participation (see Appendix A). Thirty-nine subjects were women and 23 were men. The mean age was 25.8 with standard deviation of 5.0. Forty-six subjects were enrolled in a terminal master's program and 16 were enrolled in a Ph.D. program.

## Design

A 2 x 2 factorial design was employed. The between-subjects factors were: level of experience and version of the case study. Each factor contained two groups: (1) high versus low level of training and (2) sexual orientation salient versus sexual orientation not salient.

## Independent Variables

Training levels were divided into low and high groups based on the subject's program and the number of clients counseled. The low level of training group

consisted of master's students without any counseling experience. The high level of training group consisted of master's students with some counseling experience (at least one client) and all students in the doctoral program. The subjects were divided again according to the version of the case study they received. Form A presented a salient cue about the client's sexual orientation while Form B did not contain a salient cue about sexual orientation.

The case study was modified from an example in the DSM-III-R Case Book (Spitzer, Gibbon, Skodol, Williams, & First, 1989). The "Junior Executive" (p. 37) exhibits symptoms and criteria for Axis I: 300.40 Dysthymia, Primary Type, Early Onset. For increased effects of saliency for Form A, the client's sexual orientation was included in the opening sentence. The original description was changed from a female client to a gay male client and stereotypical information (i.e., he did not participate in sports) about gay males was added to the description. Such information was consistent with the inversion model of homosexuality which states that people attribute feminine qualities to gay males and masculine qualities to lesbians (Kite & Deaux, 1987). Form A was the revised case study (see Appendix C) described above and Form B was identical with the

exception of the first sentence which described the client as a "male" instead of "gay male."

## Measures

A diagnostic questionnaire (see Appendix D) was developed to assess the degree to which counselors-in-training conceptualized the case study as having a mental illness. The questionnaire provided a list of seven potential diagnoses and their definitions selected from the DSM-III-R Manual. The seven mental illness areas were: (1) Major Depression, (2) Identity Disorder, (3) Social Anxiety, (4) Alcohol/Drug Dependence, (5) Sexual Dysfunction, (6) Dysthymia, and (7) Personality Disorders. Participants rated the likelihood of having the specific mental illness using a seven-point scale from 0 (none) to 6 (very). The sum of the seven ratings served as the dependent measure of the degree to which a counselor-in-training evaluated the client as having a mental illness. Using the same seven criteria, participants were also instructed to rate the severity of the mental illness using a seven-point scale from 0 (not) to 6 (very). The sum of the severity ratings was used as the dependent measure of the participant's perception of the severity of the mental illness.

A 15 item questionnaire (see Appendix E) to assess one's attitudes toward gays/lesbians provided information about pre-existing schema on homophobia. Walker and

Antaki (1986) found sexual orientation effective in accessing stereotypical categories and found negative attitudes toward homosexuals affected how information was recalled. Subjects were asked to indicate the degree of agreement/disagreement from 0-6, respectively, on each of the 15 questions. Eight questions from the scale developed by Begin (1981) were used following the example of Dupres, Levy, Samson, and Tessier (1989). In their large study (N=407) they borrowed questions from Begin's survey to assess homophobia and its effect on attitudes about AIDS. Because counselors-in-training are expected to be more tolerant than the general population of varying sexual orientations, cultures, races, and values, seven additional questions to differentiate between lower levels of the tolerance were written by the author in the style of Begin (e.g., "I would have a sexual relationship with someone who has had homosexual intercourse)." The Pearson Product Moment Correlations of the 15 questions (See Appendix E) indicate significant association at the .05 and .01 levels between most questions.

## Procedure

Subjects read the case study and completed the questionnaires in a group format or individually. For those participants receiving the experiment in a group, instructions were given verbally by the principal

investigator. For those who participated individually, written instructions were provided (see Appendix F).

A set of three 8" x 11.5" manilla envelopes numbered 1-3 and marked with (form) A or B were handed out at random to each subject. The first envelope contained instructions to read the case through one time and when finished to replace it in Envelope #1 before opening Envelope #2. Envelope #2 instructed the subject to fill out the requested demographic information then fill out a questionnaire about the case study. The placement of the information sheet served as a distracting task to empty the case study from short term memory before beginning the questionnaire. Also, information used in the calculation of experience was obtained. Subjects were asked to replace all materials back into Envelope #2 and continue with Envelope #3. Envelope #3 contained a measure of homophobia. Following the completion of the questionnaires, the participants received a written debriefing (see Appendix G).

## CHAPTER IV

## RESULTS

A 2 (high versus low level of training) X 2 (sexual orientation as salient versus not salient) multivariate analysis of covariance (MANCOVA) with degree of homophobia as the covariate was conducted. The likelihood of having a mental illness ratings and the severity associated with having a mental illness ratings served as the dependent variables.

The descriptive data, including a display of the means and standard deviations for the composite likelihood and severity ratings by training level and salience with correspondent measures on the homophobic questionnaire, is provided in Table 1.

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Insert Table 1 about here

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Results of the MANOVA indicated a main effect for level of counselor experience, Wilks $F = 4.590$, $p < .014$. Univariate analyses of variance suggested that level of training was related to both the likelihood ratings that the client had a mental illness, $F(1,56) = 5.11$, $p < .028$, and the severity ratings of mental illness, $F(1,56) =$

Table 1

Means and Standard Deviations of Variables in the MANCOVA

| | Independent Variables | | | | | |
|---|---|---|---|---|---|---|
| | Form A (gay, male) | | | Form B (male) | | |
| | Mean | Std | N | Mean | Std | N |
| Likelihood | | | | | | |
| Low Training | 26.36 | 6.70 | 11 | 26.92 | 6.47 | 12 |
| High Training | 23.19 | 5.23 | 21 | 23.18 | 5.27 | 17 |
| Severity | | | | | | |
| Low Training | 25.55 | 8.48 | 11 | 25.75 | 6.47 | 12 |
| High Training | 20.18 | 6.86 | 21 | 21.00 | 5.22 | 17 |
| Degree of Homophobia | | | | | | |
| Low Training | 1.73 | 1.14 | 11 | 1.48 | .57 | 12 |
| High Training | 1.30 | .95 | 21 | 1.25 | .73 | 17 |

9.52, $p < .003$. Examination of the means (Table 1) indicated that the low level of training group was more likely to rate the client as having a mental illness and rated the mental illness more severely than the counselors in the high level of training group.

There was a significant within groups effect for attitudes about gay sexual orientation $F = 3.13$, $p < .052$. A regression analysis between the homophobic questionnaire and the dependent variables indicated that greater homophobic attitudes were associated with lower severity of mental illness ratings, beta = -.252, $t = -1.95$, $p < .057$, $eta^2 = .063$. There was not a significant effect for the likelihood of having a mental illness.

There were no significant between group main effects for the salience of the client's gay orientation, and there was no interaction effect for salience of sexual orientation and experience level of the counselor.

# CHAPTER V

# DISCUSSION

## Level of Experience

As predicted, level of experience affected how the client was diagnosed. More experienced counselors rated the gay male and male client significantly less likely to have any of the seven diagnoses than the less experienced counselors. The more experienced counselors also rated the severity of the diagnoses for the gay male and male client less than the unexperienced counselors.

The explanations of this finding are understood in terms of self-schema. Experience can be defined as greater depth and breadth of knowledge (Gebotys, & Claxton-Oldfield, 1989) or a more expansive schema. The more experienced clinician has a larger number of past expectancies and more complex prototype for a (dysthymic) client. The likelihood and severity ratings of more experienced counselors-in-training are based on a broader schema of mental illness than those with less experiences and the importance of the salient information is less exaggerated. The novice counselor has a limited schema and improperly weights the significance of presented information; (Dumont & Lecomte, 1987) therefore, the

likelihood and severity ratings for the counselors with less training were higher.

The less likely and less severe ratings of the client having a mental illness ratings by more experienced counselors-in-training are consistent with the expert-novice literature. Experience level has been found to influence expectancies about how a client was diagnosed, prognosed, and processed (Bernstein & Lecomte, 1982), but the finding of this experiment provides evidence on the specifics of that influence. This result indicates that there is a negative relationship between level of experience and the rated likelihood and severity of a client having a mental illness.

If such a small difference in experience (the minimum being counseling one client) can affect how one views the client, then educational institutions should respond by evaluating their training programs. If novice counselors attend to salient information and incorrectly weigh it in the decision-making process, then students must be alerted to this tendency. Furthermore, their limited knowledge base requires training that gives more examples of various types of clients in order to expand schema.

This finding does not allow us to interpret the correctness of the likelihood and severity ratings for more experienced counselors-in-training versus the less

experienced counselors. Even professional counselors with several years of experience are prone to biases. However, the establishment of reliable ratings for the likelihood and severity of mental illness for this case study would provide a basis for the comparison of correctness. Currently, the interpretation of the effects of expertise is limited to comparisons of differences rather than comparisons of accuracy.

## Effects of Schema

The degree of homophobia was associated with differences in the severity ratings of mental illness for both high and low levels of training. Specifically, as degree of homophobia increased the severity of mental illness ratings decreased. Degree of homophobia was not associated with differences in the likelihood of mental illness rating.

There is a trend toward understanding and an absence of bias toward people of various race, ethnicity, and sexual orientation. The helping professions have recently began to acknowledge cultural issues as an explanation of behavior rather than an attribution of pathology. Entire courses have been devoted to counseling clients who are not white, middle class, and heterosexual. Although such classes have began to alert counselor trainees to potential biases, that does not mean that counselors-in-training are able to eliminate

biases. Rudolph (1990) found that graduate counseling students do not necessarily view homosexuality as pathological nor do they deny homosexuals their civil rights, but subjects were not asked to diagnose the client. Given, the sensitivity of homophobia as well as racism or sexism, there is the possibility that more homophobic counselors attempted to hide their biases by underestimating the severity of the client's symptoms. This phenomenon is often called "faking good." Bernstein and Lecomte (1989) support this explanation. They found that the characteristics of the counselor affected expectations about a client rather than the characteristics of the client (gender).

The tendency of counselors with more homophobia to underestimate the severity of a client's mental illness has not been previously researched, therefore such a finding is important. Establishing that counselors have varying degrees of homophobia which may effect the client necessitates research investigating at what degree homophobia becomes potentially harmful to homosexual clients. Currently, there is no cross-sectional information about the level of homophobia in the United States. Future research should focus on assessing homophobia to provide a context for comparison. A large scale, cross cultural study of attitudes toward homosexuality would provide the "norm attitude"

information necessary to make comparisons between groups (i.e., counselors versus laypersons).

Effects of Experience with Schema

The third hypothesis predicted there would be a difference in the likelihood and severity ratings between the gay male client and the male client for both low level of training and high level of training, but it was not supported. As evidenced by the insignificance of the salient cue, knowing the client's sexuality did not influence the likelihood and severity ratings for low and high levels of training.

An explanation of the insignificance of sexual orientation can be considered in terms of a statistical limitation. The effect size and power of salience suggest that the case study descriptions may not be strong enough to elicit discriminating responses. A stronger questionnaire may have produced significant differences. It is also possible that the definitions of experience used in this study could not detect biases for this particular effect.

This finding is not consistent with research on the effects of homosexuality on case conceptualization. Davidson and Friedman (1981) found that a person's psychological problems were rated more severely on DSM-II diagnoses if the client was homosexual. However, their study used subjects in an undergraduate, introductory

psychology class so their level of expertise was lower than that of the subjects in this thesis experiment. Social cognitive literature would have expected the gay male client to be have a higher likelihood of diagnoses and higher severity rating because of the negative stereotypes held about gays. The presentation of a salient cue increases the likelihood that heuristic processes are used (Whittler, 1989). Furthermore, sexual orientation has been an effective salient cue for accessing stereotypic categories (Walker & Antaki, 1986) and knowing a person belongs to a stereotyped group increases stereotypic attributions (Gurwitz & Dodge, 1977). Although the form used to assess the effects of salient sexual orientation on the diagnoses of the client was designed in accordance with past research, it did not elicit any significant differences between likelihood and severity of mental illness ratings.

Despite the insignificance of salience, counselors-in-training are not immune with respect to sexual orientation. Such a generalization would be tempting, but not necessarily accurate. This finding does suggest that between the low and high level of training defined in the method section, sexual orientation is not a discriminating factor for the explanation of differences between the likelihood and severity that a client has a mental illness. Research with a larger sample size and

a validated questionnaire would clarify the interpretation of this finding.

## General Implications of the Study

The study suggests that cognitive heuristic processes can be understood in conjunction with other cognitive structures as influential in the case conceptualization of clients. Heuristics may result in harmful errors because the self-schema which organizes the incoming information biases the resulting judgments. The counseling profession has debated the clinician's ability to put aside their own personal thoughts and feelings in the therapeutic relationship. Although the "tabula rasa" notion is no longer popular, an acceptance of biases or errors in judgment is not widespread. Until recently, the early cautions of Meehl (1954) have been ignored.

There is a lack of established measures of self-schema. Research should develop measurements of homophobia, sexism, racism, etc. This would allow for comparisons of biases between groups and with a norm group. Without valid and reliable tools of measurement a serious investigation of counselor biases cannot proceed.

Given that self-schema interact with cognitive heuristics to affect the case conceptualization process, educational institutions need to respond. According to

Fischhoff, explaining heuristic processes and their potential for judgmental biases is not enough to prevent heuristic use or resulting errors (cited in Sherman & Corty, 1984), but others (e.g., Ross, Lepper, & Hubbard, 1975) believe it is a good starting point. Research by Koriat, Lichtenstein, and Fischhoff; and Hoch (cited in Baron, 1990) has proven that the errors resulting from cognitive heuristics can be suppressed. Baron (1990) proposes that "actively open-minded thinking" can reduce overconfidence in decisions and nullify the schema preserving function. This approach promotes a search for counterevidence and allows for the expansion of categorical rules. Agnoli and Krantz (1989) had success counteracting heuristic error by extending the principles governing heuristic operations. They taught subjects problem-solving techniques to interrupt or slow the automaticity of heuristics. Armstrong, Denniston, and Gordon (cited in Sherman & Corty, 1984) required a presented question be broken into smaller questions less complex than the original. The integrated answers were more accurate.

## Limitations of the Study

The study had a limited sample size and participants were from one counseling psychology program. Whether these findings are consistent with other counseling psychology programs as well as clinical social work and

clinical psychology programs remains to seen. Differences in program curricula and theoretical orientation may influence the development of counselors-in-training. Also, the doctoral students were not monitored when they completed the experiment. They may have referred back to the case or read it more than once despite instructions to do otherwise. The environment in which they performed the experiment may have been more distracting than the quiet classroom conditions experienced by master's students. These differences must be considered when assessing the validity of the experiment.

Statistically, there is some question about the differences in subject numbers between the low level and high level of training groups. The distribution of the number of client's counseled necessitated an uneven split between the two groups. Whether or not this affects the interpretability of the F statistic was not evident in either the assumptions of homogeniety or the post-hoc testing, but it remains an area of concern.

Although the homophobic measure had high associations between questions suggesting construct validity, no reliability or validity was established before its use in the experiment. Lack of criterion-related validity may have contributed to its failure to confirm that the likelihood ratings of a client having a

mental illness increased with level of homophobia. Further complications may have resulted from social desirability bias because homophobia is a very sensitive issue. This measurement needs additional testing using a broader population sample to establish reliability and validity data.

## Future Directions

In what other ways do cognitive heuristic and cognitive structures affect the client. There are many other components to therapy besides diagnoses. How do initial judgments affect the outcome of therapy? How are they related to specific theoretical orientations? Are certain clients more affected by the counselor's self-serving biases than other clients?

What about the counselor's characteristics as an influence on the decision-making process? A counselor's clinical experience is just one of the many characteristics to be addressed. What about race, gender, age, SES?

In regard to cognitive heuristics per se, research specifying the type cognitive heuristic (i.e., anchoring) within an integrative framework may provide more clues about its specific errors in the therapeutic process. By doing so, the particular operations of each type of heuristic can be paired with previously established results. For example, were the differences in severity

ratings a function of the representative or availability heuristic?

After research has amassed more knowledge about biases when performing counseling activities, then more information is needed about the generalizability of these findings? Do these process take place in the actual therapy session? Clearly, this area is wide open for exploration.

## Summary

Laypersons do not always make statistically correct decisions. Counselors are not beyond inaccurate decision-making, and in fact they often rely on cognitive heuristics in order to make more timely judgments. The potential for systematic errors exists as a function of the inherent subjectivity of the counselor. The effects of self-schema (subjectivity) on the organization of information have been demonstrated in the differences in diagnoses of a gay, male client. Homosexuality is just one area that personal values, beliefs, and pre-existing expectancies can influence the counselor's reactions to a client. If the counseling profession is to achieve their goal of helping others, then training and education to make counselors effective with clients of all types is necessary.

APPENDIX A

CONSENT FORM

Counselors and the Process of Case Conceptualization

A case scenario will be presented to the subject. The subject will the engage in a simple listening task and then he/she will then be asked to answer questions pertaining to case information. An attitude questionnaire will follow.

I, _____state that I am over 18 years of age and that I wish to participate in the research project being conducted by Kelly Arduino, Master's candidate. I have had the procedures in which I will participate explained to me, and have been informed that I may withdraw from participation at any time without prejudice.

I understand that there is no risk for physical or emotional injury and that in no way will my name or any identifying information be connected with the data collected. Should I have any further questions regarding the research conducted, I may contact the investigator, Kelly Arduino at (312) 275-6248.

In the event that I believe I have suffered any discrimination or harm, I may contact the Chairperson of

the Institutional Review Board for the Protection of Human Subjects for the Lake Shore, Water Tower, Mallinckrodt campuses of Loyola University (telephone:[312] 508-2471).

I freely and voluntarily consent to participation in this research project.

_____

(Signature of Subject) (Date)

## APPENDIX B

## INFORMATION SHEET

What is your age?

What is your theoretical orientation?

How many clients have you counseled?

0 <10 <25 <50 >50

What year are you in your current program?

1st year 2nd year 3rd year 4th year 5th year

## APPENDIX C

## CASE STUDY

A 28 year old, white gay male was referred to the agency for individual therapy. He has obtained a master's degree in business administration and moved to California a year and a half earlier to begin work in a large firm. He complained of being "depressed" about everything: his job, his most current relationship, and his prospects for the future.

He has received extensive psychotherapy in the past. He had seen an "analyst" twice a week for three years while in college, and a "behaviorist" for a year and a half while in graduate school. His complaints were of persistent feelings of depressed mood, inferiority, and pessimism, which he claims to have had since 16 or 17. Although he did reasonably well in college, he consistently ruminated about those students who were "genuinely intelligent." He claimed that therapy helped, but he could not remember a time when he didn't feel depressed.

He had several sexual partners during college and graduate school, but claimed that he would never go after anyone he thought was "special," always feeling inferior

and intimidated. Whenever he saw or met a potentially "special"
partner, he acted aloof and stiff, or actually walked away as quickly as possible, only to berate himself afterward and then fantasize about that person for many months.

Client is an only child from an intact family. He states he is close with his mother and talks with her on the phone at least twice a week. His feels afraid of and distant from his father, whom he describes as a "workaholic" and rarely around during his childhood. Client went to a small rural high school where sports were very important, and because he did not participate in them felt shunned and left out by others. He dated a couple women in high school, but very briefly. The client stated he had a male English teacher who was his "first real friend" and encouraged him to go onto college, even though the client didn't feel he would be able to get accepted.

Recently, he has been having difficulty at work. He is assigned to the most menial tasks at the firm and is never given an assignment of any importance or responsibility. He admits that he frequently does a "slipshod" job of what is given him, never does more than is required, and never demonstrates any assertiveness or initiative to his supervisors. He views his boss as

self-centered, unconcerned, and unfair, but nevertheless admires his success. He feels that he will never go very far in his profession because he does not have the right "connections," and yet he dreams of money, status, and power.

Under the burden of his dissatisfaction with his current relationship, his job, and lack of a social life, feeling tired and uninterested in "life", he now seeks treatment for the third time.

## APPENDIX D

## DIAGNOSTIC QUESTIONNAIRE

The following is a list of the instructions and diagnoses which were rated on a scale 0-6. In terms of diagnosis, read the following DSM-III-R definitions for common mental disorders.

1) INDICATE THE LIKELIHOOD THAT A GIVEN DIAGNOSIS MAY CHARACTERIZE THE CLIENT'S DIFFICULTIES.
2) INDICATE THE SEVERITY OF THE DIAGNOSIS.

MAJOR DEPRESSION: Has had a Major Depressive Episode which lasts at least 6 months. Has never had a Manic Episode or an unequivocal Hypomanic Episode.

IDENTITY DISORDER: Severe subjective distress regarding uncertainty about a variety of issues.

SOCIAL ANXIETY: Uneasiness in a situation which involves social interaction.

ALCOHOL/DRUG DEPENDENCE: A state, psychic and sometimes physical, resulting from taking drugs/alcohol

characterized by behavioral and other responses that always includes a compulsion to take a drugs/drink on a continuous or periodic basis.

SEXUAL DYSFUNCTION: Inhibition in the appetitive or psychophysiologic changes that characterize the sexual response cycle.

DYSTHYMIA: Chronic disturbance of mood involving depressed mood, for most of the day more days than not, for at least 2 years.

PERSONALITY DISORDERS: Deeply ingrained patterns of behavior generally recognizable in adolescence or earlier and continuing throughout most of adult life. The personality is abnormal wither in the balance of its components, their quality and expression, or in its total aspect.

## APPENDIX E

## HOMOPHOBIC QUESTIONNAIRE

The subject rated the following questions from strongly agree (0) to strongly disagree (6).

1. Homosexuality is a mental illness.
2. Homosexuality is a natural expression of one's sexual preference.
3. It is acceptable to have interactions with gays/lesbians.
4. Gays/lesbians generally detest the opposite sex.
5. If found out my best friend was gay/lesbian that would not change our friendship.
6. A relationship between gay/lesbians is as authentic and "deep" as a heterosexual relationship.
7. If my son or daughter was gay/lesbian, I would accept his or her lovers without a problem.
8. I would accept the teacher of my child, if they were gay/lesbian.
9. I feel sorry for people who choose to lead a gay/lesbian lifestyle.
10. I think it is acceptable for gay/lesbian couples to raise children.

11. If think gays/lesbians should be accepted in the military.
12. I would have difficulty counseling a gay/lesbian client.
13. I do not feel that gay/lesbians should have the same rights as heterosexual couples.
14. Human beings are meant to be heterosexual.
15. I would have a sexual relationship with someone who has had homosexual intercourse.

TABLE E-1

PEARSON PRODUCT MOMENT CORRELATIONS FOR HOMOPHOBIC QUESTIONS NUMBERS 1-5

| | Gay1 | Gay2 | Gay3 | Gay4 | Gay5 |
|---|---|---|---|---|---|
| Gay1 | 1.000 | .500** | .323* | .250 | .298 |
| Gay2 | .501** | 1.000 | .404** | .345** | .198 |
| Gay3 | .323* | .404** | 1.000 | .253* | .140 |
| Gay4 | .250 | .345** | .253* | 1.000 | .323* |
| Gay5 | .298** | .197 | .140 | .323* | 1.000 |
| Gay6 | .490** | .422** | .545** | .152 | .278* |
| Gay7 | .468** | .560** | .344** | .293* | .494** |
| Gay8 | .425** | .492** | .320* | .037 | .288* |
| Gay9 | .326*. | .393** | .085 | .366** | .040 |
| Gay10 | .555** | .573** | .364** | .154 | .393** |
| Gay11 | .180 | .429** | .268* | .173 | .317* |
| Gay12 | .624** | .430** | .069 | .257* | .335** |
| Gay13 | .360** | .360** | .214 | .074 | .313* |
| Gay14 | .139 | .219 | .142 | .048 | -.006 |
| Gay15 | .251* | .281* | .277* | .234 | .188 |

*indicates significance at the .05 level

**indicates significance at the .01 level

TABLE E-2

PEARSON PRODUCT MOMENT CORRELATIONS FOR HOMOPHOBIC QUESTIONS NUMBERS 6-10

| | Gay6 | Gay7 | Gay8 | Gay9 | Gay10 |
|---|---|---|---|---|---|
| Gay1 | .490** | .468** | .425** | .326* | .555** |
| Gay2 | .422** | .560** | .492** | .393** | .573** |
| Gay3 | .545** | .344** | .320* | .085 | .364** |
| Gay4 | .152 | .293* | .037 | .366** | .154 |
| Gay5 | .278* | .494** | .288* | .040 | .393** |
| Gay6 | 1.000 | .572** | .540** | .189 | .476** |
| Gay7 | .572** | 1.000 | .655** | .243 | .596** |
| Gay8 | .540** | .655** | 1.000 | .222 | .577** |
| Gay9 | .189 | .243 | .222 | 1.000 | .217 |
| Gay10 | .476** | .596** | .577** | .217 | 1.000 |
| Gay11 | .373** | .535** | .468** | .170 | .533** |
| Gay12 | .398** | .278** | .313* | .365** | .332** |
| Gay13 | .339** | .473** | .434** | .233 | .609** |
| Gay14 | .299* | .394** | .332** | .242 | .185 |
| Gay15 | .142 | .339** | .279* | .176 | .439** |

*indicates significance at the .05 level

**indicates significance at the .01 level

TABLE E-3

PEARSON PRODUCT MOMENT CORRELATIONS FOR HOMOPHOBIC QUESTIONS NUMBERS 11-15

| | Gay11 | Gay12 | Gay13 | Gay14 | Gay15 |
|---|---|---|---|---|---|
| Gay1 | .180 | .624** | .360** | .139 | .251* |
| Gay2 | .429** | .430** | .359** | .219 | .281* |
| Gay3 | .268* | .069 | .214 | .142 | .278* |
| Gay4 | .173 | .257* | .074 | .048 | .234 |
| Gay5 | .317* | .335** | .313* | -.006 | .188 |
| Gay6 | .373** | .398** | .339** | .299* | .142 |
| Gay7 | .535** | .278* | .473* | .394** | .339** |
| Gay8 | .468** | .313* | .434** | .332** | .277* |
| Gay9 | .170 | .365** | .233 | .242 | .176 |
| Gay10 | .533** | .332** | .609** | .185 | .439** |
| Gay11 | 1.000 | .315* | .480** | .233 | .242 |
| Gay12 | .315* | 1.000 | .325** | -.003 | .105 |
| Gay13 | .480** | .325** | 1.000 | .204 | .310* |
| Gay14 | .233 | -.003 | .204 | 1.000 | .273* |
| Gay15 | .242 | .105 | .310* | .273* | 1.000 |

*indicates significance at the .05 level

**indicates significance at the .01 level

## APPENDIX F

## INSTRUCTION SHEET

I ask that you read the following instructions very carefully before proceeding. This should take no more than 20 minutes of your time.

Before you begin, I have enclosed a consent form which formally states that you will be at no risk by participating in this project and you understand as much. Please read and sign this for my records. It will be separated from your data upon the receipt of this project.

INSTRUCTIONS

I. You should have 3 envelopes with a code letter and number combination on each envelope. If you do not have all three do not complete the experiment and call the researcher.

II. Take out the contents of the first envelope, read and follow the instructions enclosed. The contents of the envelopes are separated for a reason, so please do not refer back to any envelope after replacing its contents.

III. Open envelope #2 and fill out the demographic data.

In the top right hand corner after "CODE." Please put 300 and then an "M" for male or a "F" for female as is appropriate. Turn to the next page, read the instructions and begin with the questionnaire.

IV. Follow the instructions provided at the end of questionnaire #2 and open envelope #3.

V. After you have completed the questionnaire, place all three envelopes along with the consent form in the box in the CEPS reception area above the faculty mailboxes. It will be marked **KA THESIS.** At the bottom of that box there will be an envelope marked debriefing. You are welcome to take a copy of the debriefing, and as it states give me a call if you have any questions.

I realize that everyone is very busy, but I would prefer that you could have the completed study turned in within seven days. It will help me to have all my data collected and enable me to begin the data entry process.

THANKS AGAIN FOR PARTICIPATING.

Kelly Arduino

(312)275-6248

## APPENDIX G

## DEBRIEFING

The experiment in which you just participated is theoretically based on an information processing principle called "cognitive heuristic". Cognitive heuristic are shortcuts in information processing that individuals use in order to reduce complex problem-solving when making uncertain judgments (Tversky & Kahneman, 1974). Cognitive heuristic are necessary because they allow one to organize large amounts of information in a timely manner; however, the heuristic process often leads to errors in judgment (Nisbett & Ross, 1980). Accuracy and thoroughness of a judgement are complicated by such conditions as: time limitation, complexity and/or volume of relevant information, and uncertainty about the information (Fiske & Taylor, 1984). Personal values and beliefs or pre-existing expectations can affect this process, and lead to faulty judgments due to an overreliance on non-relevant information, (Fiske & Taylor, 1984). As a consequence, individuals make adequate decisions rather than a "rational" decision (March & Simon, 1958), based on presented evidence and

probability.

As counselors, we are in a situation parallel to the conditions defined above. An intake session gathers information similar to the case you read for the experiment. I am interested in what information counselor-trainees do attend to and how they judge the importance of that information in identifying the client's issues, conceptualizing the client, and diagnosing the client.

To further assess the cognitive heuristic processes when a very salient cue is included, half of the subjects were told that the client was gay (salient cue) and half (control group) were not; the homophobic questionnaire assessed pre-existing values and beliefs. I will be giving this to master's, and doctoral students to study the effects of experience.

It follows that if the counseling profession better understands how cognitive heuristic work in their field, we may investigate ways of guarding against any faulty judgments which may effect the client.

If you have any further questions or comments about my thesis, I can be reached at (312)275-6248. I will be glad to talk with anyone about it. Thanks again for your participation.

Kelly Arduino

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# VITA

The author, Kelly E. Arduino, was born in Kalamazoo, Michigan.

In September 1985, Ms. Arduino entered Northwestern University, receiving the degree of Bachelor of Arts in Education in June, 1989.

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APPROVAL SHEET

The thesis submitted by Kelly Elizabeth Arduino has been read and approved by the following committee:

Dr. Scott Solberg, Director
Assistant Professor, Counseling Psychology
Loyola University of Chicago

Dr. Steven Brown
Professor, Counseling Psychology
Loyola University of Chicago

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the thesis is now given final approval by the Committee with reference to content and form.

The thesis is, therefore, accepted in partial fulfillment of the requirements for the degree of M.A.

4/18/94
Date

Director's Signature