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DIMENSIONS OF SOCIAL INFLUENCE:
INTERROGATIVE, HYPNOTIC, AND SOCIAL SUGGESTIBILITY

by
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A thesis submitted to
The Faculty of Graduate Studies and Research
in partial fulfilment of
the requirements for the degree of

Doctor of Philosophy

Department of Psychology

Carleton University
Ottawa, Ontario
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the Faculty of Graduate Studies and Research
acceptance of the thesis,

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Interrogative, Hypnotic, and Social Suggestibility"

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Abstract

Two studies which investigate the relationships between measures of suggestibility and social influence are presented. Study 1 examined the concept of interrogative suggestibility. Gudjonsson's (1984a) Interrogative Suggestibility Scale (GSS) is purported to measure individual differences in response to social pressures in a forensic context. This instrument assesses the degree to which subjects "yield" under leading interrogation and "shift" their responses after negative feedback. Multivariate statistical procedures were used to investigate the relationships between suggestibility as measured by the GSS, hypnotic responsiveness, and selected personality dimensions. These dimensions were chosen as tapping social complaisance and a tendency to rely on social cues for the determination of appropriate behavior. The results of Study 1 indicate that interrogative suggestibility is generally independent of hypnotic responsiveness. Correlations between GSS scores and self-monitoring, self-consciousness, self-esteem, and concern for appropriateness were also generally low. Subjects' interrogative suggestibility scores did, however, predict the number of misleading "facts" mistakenly incorporated into subsequent recall (memory intrusions).

Study 2 involved the development and interpretation of a new 45 item scale of social suggestibility. Factor analytic procedures revealed the presence of five underlying constructs: Concern for Social Appropriateness, Ego Strength, Persuasibility, External
Influence, and Consideration of Others. All five factors correlated significantly with measures of compliance and social conformity, but were independent of behavioral and subjective measures of hypnotic responsiveness, and of responding on an influencibility task. A higher order factor analysis indicated that Concern for Social Appropriateness, Persuasibility, and External Influence loaded on a common underlying dimension of responsiveness to others' expectations and social conventions and a tendency to go along with the crowd.

In general, the behavioral measures of suggestibility failed to correlate with one another, and were poorly predicted by personality scales, indicating a lack of cross-situational generalizability of suggestibility. Implications of the findings of these two studies with respect to the multidimensionality of suggestibility and the forensic aspects of hypnosis and hypnotizability are discussed.
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Dimensions of Social Influence: 
Interrogatory, Hypnotic, and Social Suggestibility:

Presented herein are two studies that investigate interrogative suggestibility, hypnotic susceptibility, and responsiveness to social influence. A historical review of research in the areas of social influence and suggestibility is also presented.

Study 1 extends work on Gudjonsson’s (1984a, 1987b) scale of interrogative suggestibility. The relationship of this scale with hypnotic responsiveness and individual difference measures (self-esteem, self-monitoring, concern for appropriateness, and self-consciousness) are assessed. The effects of methodological modifications on the scale’s psychometric properties are examined, and additional measures of subject confidence and memory intrusions are presented.

Study 2 introduces a new scale of social suggestibility. Its psychometric properties and relationships with scales purporting to measure aspects of response to social influence (compliance, conformity, acquiescence, and exogenic/endogenic orientation) are investigated. Exploratory factor analytic procedures are employed to assess the factorial structure the scale. Further, a false-norm test of influencibility is conducted, and the extent of correlation between subjects’ emulative responses on this test and the factors of the social suggestibility scale is examined.

Taken together, the two studies represent an attempt to evaluate the degree of association between diverse measures of responsiveness to social influence: hypnotic susceptibility, interrogative suggestibility, influencibility, conformity, compliance, acquiescence, and “social suggestibility”.
Suggestion and Suggestibility

The concept of suggestibility has played an important role in the history of social psychological theory. Allport (1968, p. 23) states that suggestion and its related concepts, sympathy and imitation, "compose the principal triumvirate of theories in social psychology." Definitions of suggestion and suggestibility vary, but most make reference to response to suggestion or the suggestive process. MacDougall (1908, p. 100) provides an early definition of suggestion, as "...a process of communication resulting in the acceptance with conviction of the communicated proposition in the absence of logically adequate grounds for its acceptance." MacDougall postulated that the essence of suggestion involves man's instinct of submission, aroused by any person exhibiting prestige. Eysenck, Arnold, and Meili (1975) encompassed both Allport's and MacDougall's interpretations in their definition of suggestion as "a process of communication during which one or more persons cause one or more individuals to change (without critical response) their judgements, opinions, and attitudes" (p. 1077).

Schumaker's (1991, p. 3) definition of suggestibility as a term "...used to indicate a person's propensity to respond to suggested communications" closely resembles that of Eysenck, Arnold, and Meili (1975, p. 1076), who define suggestibility as "the individual degree of susceptibility to influence by suggestion and hypnosis." Hypnosis has been viewed by many theorists as an extreme instance of the suggestive process, and in its early form (i.e., "animal magnetism"), comprised perhaps the earliest explanation of the process of suggestion (Allport, 1968).

Historical Background: Suggestion and Hypnosis

The concepts of suggestion and suggestibility have been investigated since early researchers sought an explanation for behaviors brought about by "animal magnetism" in the late eighteenth century. A French Royal Commission, headed by Benjamin Franklin, was called to investigate claims of miraculous cures
brought about by the healing powers of animal magnetism, also known as "mesmerism", so-named after the founder of the procedure, Franz Anton Mesmer. Mesmer (1779) claimed that his "cures" involved the transmission of subtle fluids between the magnetizer and patient. However, any healing powers in the animal magnetism procedure, the commission reported, could be attributed to the effects of imagination, expectant desire, and the power of suggestion (Franklin et al., 1785/1970).

The concepts of suggestibility and hypnotizability have been linked ever since. When researchers such as Braid (1846) began to investigate hypnosis from a more psychological point of view, suggestion was acknowledged as playing a role during the preparation and onset of the hypnotic induction (Gheorghiu, 1984). However, hypnosis was not regarded at that time as simply a special form of suggestibility.

It was the Nancy School, and in particular Bernheim, who argued that suggestion was both a cause and an explanation for hypnotic phenomena. Bernheim (1910) viewed hypnosis simply as a state of hypersuggestibility. For the better part of a half-century, however, Bernheim's theories of hypnotic responding were not espoused by the majority of researchers in the field. This may be due to the circularity of his postulations, as well as to his claim that hypnotic phenomena could be entirely explained by suggestion and suggestibility.

Seashore (1895), Sidis (1898), and Binet (1900) were among the first researchers to investigate the phenomenon of suggestibility outside of the context of hypnosis. Binet indicated that to fully understand suggestibility in its broad sense, one must take into account the individuals' attitudes, expectations, and imagination. This reasoning mirrored the findings of the earlier French Royal Commission with respect to accounts of hypnotic phenomena. Seashore recognized the importance of wording and contextual cues when assessing suggestibility. With regard to the influence of sensory processes, Seashore (1895, p. 63) wrote: "A seemingly insignificant word, thing or circumstance may determine what the observer shall see or not". Sidis believed that he had
discovered the main laws of suggestible behavior, leading him to the simplistic generalization, "not sociability, nor rationality, but suggestibility is what characterizes the average specimen of humanity. man is a suggestible animal (Sidis, 1898, p. 17)." Bernheim (1910) also argued that suggestibility was a phenomenon that comes into play in the waking state as well as during hypnosis. He believed that outside of hypnotic behavior, suggestibility manifested itself in the daily influence of one individual upon another resulting in a change in beliefs and attitudes; indeed, such was the "stuff" of formal education.

The work of Bernheim, Sidis, and Binet strongly influenced Hull's (1933) notion of prestige psychology. For each of these investigators, suggestion was a process that acted automatically and that bypassed critical faculties in producing effects on behavior. White (1941) was the first modern investigator to critically challenge the notion that behavior flowed automatically from the suggestions of the hypnotist, and instead hypothesized that hypnotic responding involved goal-directed behavior. White theorized that hypnotic behavior was but a special form of social behavior determined by subjects' implicit expectations, and guided by their attempts to portray themselves in terms of what they believed the hypnotist expected of them.

Contemporary research in hypnosis has tended to follow one of two paths. The "social psychological" approach (Barber, 1979; Sarbin & Coe, 1972; Spanos, 1986) is based on White's conceptualizations of hypnotic behavior as goal-directed and role-playing behavior. Cooley (1922) and Mead (1934) had earlier recognized the social determinants of even nonhypnotic behavior in the subject-experimenter relationship, whereby each participant in the relationship responds to the other in terms of their respective roles. Researchers following the social-psychological path of hypnotic responding emphasize the role-playing and situational aspects involved in the subject-hypnotist relationship. According to these theorists, subjects enacting the role of a "good" hypnotic subject base their responses on preconceptions and expectations concerning hypnosis, and use cues that they gather in the hypnotic
context and from the hypnotist to guide them to what they interpret to be appropriate behavior. Researchers espousing the “special process” or “state” theory (Bowers, 1976; Evans, 1967; Hilgard, 1977), on the other hand, tend to consider hypnotic behavior more in terms of traditional notions of ideo-motor responding, typically interpreting hypnotic behavior as occurring automatically to the subject, while downplaying the importance of attitudes, expectations, and contextual influences.

Tests of Waking Suggestibility

Interest in individual differences and experimental psychology at the turn of the century led to the development of many tests of suggestibility outside of the hypnotic context. The majority of these early suggestibility tests dealt with the effects of suggestion upon the sensory system. On many of these tasks, subjects were tested indirectly, without knowing that attempts were being made to influence their perceptions or judgments, or to induce them to report the presence of a stimulus (tactile, visual, or olfactory) when in fact no stimulus was present. Binet’s (1900) progressive weights and lines tests are examples of this type of indirect suggestion. The progressive weights test involves having subjects lift, one at a time, each of a series of boxes. The first few boxes are each slightly heavier than the one before it, but the last boxes are of equal weight. The extent to which subjects report differences between the weights when none exist is taken as a measure of suggestibility. The progressive lines test operates in the same manner, involving the discrimination of line lengths rather than weights.

Hull (1933) later labelled indirect tasks of this type tests of “impersonal suggestion”. Tests of “personal suggestion”, on the other hand, involved explicit statements by an operator that a particular behavioral effect (the suggested effect) was occurring. Examples are Hull’s (1933) “postural sway” test in which the subjects, standing with eyes closed, are informed repeatedly that they are falling forward, and the hand rigidity test of Aveling and
Hargreaves (1921) which informed the subjects that their hand was becoming stiff and tight and unable to bend. Bird (1940) later emphasized a similar distinction between suggestibility tests, but used the labels direct versus indirect suggestibility. Historically, these distinctions have been confounded with particular suggestibility-testing procedures, particularly following the influential empirical work of Eysenck and Furneaux (1945). Tests involving motor aspects of suggestibility, such as the body sway test and Chevreul pendulum task, have a direct character. That is, they explicitly tell the subject to do or try to experience the suggested effect (e.g. "Feel yourself leaning forward, falling forward..." or "Notice the pendulum starting to swing, swinging more and more..."). Sensory tests, such as the Binet progressive weights test, on the other hand, are typically worded indirectly. As explained by Sidis (1898, p. 19) "...instead of openly telling the subject what he should do, [with indirect suggestion] the experimenter produces some object or makes a movement, a gesture which in silent fashion tells the subject what to do". Subsequent research, however, has established that both motor and sensory processes can be influenced by direct and indirect processes (Gheorghiu, Meiu, Onofrei, & Timofte, 1966; Hammer, Evans, & Bartlett, 1963) indicating that the historical confound can be avoided.

From its conception, the generality of suggestibility as a cross-test "trait" has evoked controversy. Sidis (1898) and Otis (1924) argued, on the basis of experimental findings, that there exists a general trait of suggestibility. Brown (1916) and Estabrooks (1929), on the other hand, found little empirical evidence of a such generality. Allport (1937) believed that suggestibility is a trait which may characterize only a few individuals consistently; on the whole, he concluded, suggestibility was not a unitary trait.

Eysenck and Furneaux (1945) made distinctions similar to earlier conceptions by Hull (1933) between types of suggestibility tests. Using a factor-analytic approach, these researchers distinguished between "primary" and "secondary" suggestibility. Primary suggestibility involved subjects' responding to direct
verbal suggestions, supposedly without their volitional participation. Examples of such measures include Hull's (1933) body sway test (in which the subject is told he is falling forward, and the amount of actual body sway is measured), and Chevreul pendulum test (in which the subject holds a pendulum above a ruler, and is told the pendulum will start to swing). These tests have been found to correlate with hypnotizability, and were associated by the early researchers with the ideo-motor theory of action (Eysenck & Furneaux, 1945; Hull, 1933).

Secondary suggestibility was said to be measured by indirect sensory test procedures such as the progressive lines and weights tests of Binet (1900). In these tests, subjects are asked to indicate when they perceived differences between subsequently presented stimuli (e.g. heaviness differences in weights or length differences in a series of lines) when in fact no differences existed. These tests correlated negatively with intelligence, and not at all with hypnotic responsiveness. The researchers state that “Possibly a better name for this secondary kind of suggestibility might be ‘gullibility’” (Eysenck & Furneaux, 1945, p. 494). Eysenck and Furneaux also reported the emergence of a third factor which they related to prestige suggestibility. This factor involved attitude change resulting from persuasive communication from an authority figure.

Subsequent empirical attempts to corroborate the findings of Eysenck and Furneaux (1945) with different samples have produced equivocal results. Grimes (1948) administered various tests of suggestibility to 233 orphan boys ranging in age from 8 to 15 years. Some evidence of a primary suggestibility factor emerged, but even so, inter-test correlations were small, and their three remaining emergent factors did not lead to ready explanation.

Benton and Bandura (1953), using a smaller (n=50) sample of undergraduate students, found mostly insignificant intercorrelations between tests of suggestibility. Yates (1960) later criticized their use of a sample that was quite homogeneous with respect to intelligence, which according to Eysenck (1943), was a variable strongly related to suggestibility. Although Benton and Bandura's sample was found to be relatively nonsuggestible according to the
body sway test, a later study (Evans, 1961) found undergraduate students to display a level of body sway similar to that of Eysenck and Furneaux's original sample, which was comprised of neurotic army personnel. Subsequent factor-analytic studies (Duke, 1964; Evans, 1967; Hammer, Evans & Bartlett, 1963; Stukat, 1958) found general support for a factor of primary suggestibility, but no evidence for a secondary factor of suggestibility as described originally by Eysenck and Furneaux (1945).

Duke (1964) administered a series of tests to 91 domiciled veterans between the ages of 34 and 72. Four tests similar to measures of primary suggestibility exhibited moderately high intercorrelations (average r value of .36). Five tests supposedly tapping secondary suggestibility, on the other hand, produced lower intercorrelations (average r value = .14). Duke arbitrarily divided tests included in previously published studies into four categories: tests of "task set" (progressive weights and lines), "sensory suggestibility" (heat and odor illusions, in which subjects' reports of warmth or odors when none existed was taken as a measure of suggestibility), "conformity" (picture report tests involving leading questioning), and standard geometric illusions. The correlations of tests placed both within each category and between categories were found to be generally low or zero, indicating a lack of empirical support for either the factorial uniqueness of his arbitrary categories or for a unitary concept of secondary suggestibility.

Evans (1967), after reviewing the empirical research concerning nonhypnotic suggestibility, concluded that Eysenck & Furneaux's (1945) original classification of primary and secondary suggestibility was not justified. Evans' reanalysis of the Eysenck and Furneaux data led him to identify three independent factors: "primary" (passive and/or motor) suggestibility as described originally by Eysenck and Furneaux (i.e. the body sway and pendulum tests, along with tests of hypnotic and posthypnotic responding); "challenge" suggestibility as measured by tests worded in the imperative mood (e.g., the arm rigidity suggestion, whereby the operator suggests to the subject that they cannot bend their arm, then challenging them to overcome the induced rigidity); and
“imagery” suggestibility, which may involve uncritical acceptance of an implied situation, such as the heat and odor illusions and picture report tests.

Stukat's (1958) research with a sample of Swedish adults and children revealed a secondary suggestibility factor, which he claimed involved the effect of subjective factors (such as need for conformity and expectation) on cognitive functions (such as perception and memory). Similarly, Binet (1900) had earlier conceptualized several tests of suggestibility (e.g., prestige and interrogatory suggestibility, progressive weights and lines) as involving four precursors: a) obedience to mental influence from another person; b) tendency to imitate; c) influence of a preconceived idea that paralyzed the individual’s critical sense; and d) expectative attention. The obedience and imitative aspects can be seen to be related to Stukat’s need for conformity, while the latter two (loss of critical sense and expectative attention) correspond closely to Stukat’s expectation factor.

Gheorghiu (1984) contended that the main problem with distinguishing primary and secondary suggestibility lies in the fact that two variables, direct vs indirect suggestion, and motor vs sensory suggestion, have been confounded. Tests of so-called primary suggestibility (the body sway test and the Chevreul pendulum test) are motor tests of direct suggestion, while secondary suggestibility tests, such as the ink-blot (measuring the tendency of a subject to describe a Rorschach ink blot in terms of what he or she had been told others had described it) and odor tests (in which subjects are induced to report recognizing a suggested odor from a beaker containing only water), are indirect, sensory tests.

One of the few researchers claiming to have empirically demonstrated a general underlying “trait” of suggestibility is Abraham (1962). Using a sample of 101 undergraduate students, Abraham attempted to “investigate the relationship between ideomotor and verbal susceptibility to suggestion within the same individual, and ... determine a method for predicting individual susceptibility to different types of persuasive communications”
(Abraham, 1962, p. 168). On the basis of results obtained from his study of the relationships between certain personality variables and various tests of suggestibility, Abraham concluded that "persuasibility is not an isolated trait, peculiar to a particular topic, or specific situation, but appears to have an element of generality, contributing to consistent individual differences in susceptibility to suggestion from diverse, sensory and verbal sources of influence" (1962, p. 180).

Based on the conflicting results of empirical research conducted to date, it is not entirely clear what factors, or how many, make up the construct of suggestibility. There is general evidence, however, that suggestibility is not a unitary dimension. The large majority of studies in suggestibility have employed tests of primary (motor) suggestibility. This may be due to the availability of oft-used tests of motor suggestibility (even though there were no generally accepted and established rules for the procedures used to carry out these primary suggestibility tests; Gheorghiuc, 1989). Fewer investigators have attempted to examine the relationships between sensory suggestibility, social influence, and hypnotic suggestibility. Discussion of the phenomena now turns to a review of the research in the areas of social influence and hypnotic susceptibility.

**Studies of Social Influence**

Goffman (1959) theorized that individuals coordinate their social-interactive behavior so as to construct the social realities that define them as social beings. Similarly, Hollander (1957) states that "everyone is naturally suggestible ... suggestibility is a characteristic of human beings; without it social life would be impossible" (p. 15). Strong (1991, Strong et al., 1988) proposed that "as social beings, we are heavily invested in how others behave with respect to us. This investment reflects our dependence on other people...(which is) the basic theoretical construct of social
influence" (Strong, 1991, p. 541). Dependence. Strong continues, renders us responsive to the other in social exchanges.

Similar to the construct of sensory suggestibility, the concept of social influence has been of central importance in experimental social psychology since the early years of the discipline. Although most of the research in this area has concentrated on the effects of groups or implied norms on individual behavior, researchers have followed increasingly divergent paths in their investigations of social influence. Psychologists, along with sociologists and researchers in mass communication, have investigated, among other topics: personality correlates and the generality of suggestibility, (i.e. whether or not suggestibility is a consistent trait: Abraham, 1962; Barber, 1964; Berkowitz & Lundy, 1957; Ferguson, 1944; J.R. Hilgard, 1970); age and sex differences in suggestibility and influencibility (Brown, 1916; Ceci, Ross, & Toglia, 1987; Grimes, 1948); attitudinal and situational factors in suggestibility (Coffin, 1941; Latané & Wolfe, 1981; Moscovi & Personnaz, 1980; Rosenthal, 1966); as well as combinations of the above factors (Janis & Field, 1959; McGuire, 1968; Sherif & Sherif, 1964).

Maass and Clark (1983) were correct in stating that the social influence field has been dominated by research into conformity, investigating the impact of groups on the attitudes and behavior of individuals. In fact, until the late 1960’s, the terms ‘social influence’ and ‘conformity’ were nearly interchangeable (Nail, 1986). More recently, interest in social influence has expanded to include topics such as consumer susceptibility to interpersonal influence (Bearden, Netemeyer & Teel, 1989), concern for social appropriateness (Cutler & Wolfe, 1985), the role of self-focused attention on susceptibility to suggestion (Porterfield et al., 1988), normative vs. informational mechanisms of conformity (Sistrunk, 1973), and interrogative suggestibility (Gudjonsson, 1987a). Generally speaking, however, studies of social influence have tended to follow one of two separate paths: research into suggestibility, in the older ideo-motor sense, and persuasibility, in the form of opinion change and influential communication (Hollander & Willis,
1967). Only a few researchers have attempted to integrate the constructs of suggestibility and persuasibility/influencibility.

Stukat (1958) found, in a sample of 80 adults, a significant correlation ($r = 0.35$) between the pendulum test (a classic test of primary suggestibility) and a test of responsiveness to leading questions (a test of persuasibility or influencibility). Stukat also reported a second-order factor of suggestibility, which correlated significantly both with primary suggestibility and the tendency to conform to majority opinion.

Abraham (1962) tested 101 undergraduate students in an attempt to determine the relationship between sensory and verbal susceptibility to suggestion. Based on the results of his study, which found reasonable correlations ($r_{ph}$'s of .30 to .48) among the heat test, odor test, and a persuasibility test devised by Hovland and Janis (1959), Abraham concluded that “there are measurable personality needs (autonomy and deference) which predispose individuals towards high or low suggestibility, irrespective of the sources of the suggestion ... individuals who are susceptible to suggestion in sensory tests tend also to be susceptible to persuasion in opinion change tests” (Abraham, 1962, p. 183).

Moore (1964) obtained measures of susceptibility to social influence from 80 male undergraduates; these measures included Hovland & Janis’s (1959) persuasibility test of written communications of opinion from authoritative sources, Schachter’s (1959) influencibility test with false peer group norm feedback data, and Sherif’s (1935) autokinetic test of perceptual judgment in the presence of a confederate’s influence. Although Moore hypothesized significant positive relationships among these three measures, the results of her study indicated only small nonsignificant correlations among the tests (ranging from .08 to .13). Further, only the influencibility test was found to be significantly correlated ($r_{ph} = .64$) with a measure of suggestibility (the postural sway test).
Hypnotizability and Responsiveness to Social Influence

Moore (1964) had also examined relationships between persuasibility, influencibility, the autokinetic effect, and responsiveness to suggestion following a hypnotic induction, as measured by the Stanford Hypnotic Susceptibility Scale (SHSS; Weitzenhoffer & Hilgard, 1959). Moore hypothesized that hypnotic susceptibility and social suggestibility would be essentially independent, on the premise that the former taps "primary" suggestibility, while the latter appears to be more related to conceptions of "secondary" suggestibility. The correlations between hypnotic susceptibility and two of the measures approached significance, however that with persuasibility was negative (r = -.17, p < .10), while the correlation with influencibility was positive (r = .21, p < .05). The moderate correlation of influencibility with the SHSS may be partially accounted for by the inclusion of the waking postural sway suggestion in the total SHSS score. The autokinetic test was found to be uncorrelated with the SHSS (r = -.08, n.s.). Moore concluded that the hypothesis of independence of these measures was generally supported, since the relationships are only marginal and in differing directions.

Other researchers have investigated the relationship between hypnotic susceptibility and responsiveness to social influence. Hull (1933) found a positive correlation between responses to direct, verbal suggestions and hypnotizability, but no relationship when the suggestions were worded in an indirect manner. This result reflects earlier hypnotizability/primary/secondary suggestibility findings, wherein hypnosis has been found to correlate with primary suggestibility, which involves direct tests, but not secondary suggestibility, which involves more indirect tests (Eysenck & Furneaux, 1945; Evans, 1967).

Shames (1981), on the other hand, found strong correlations between hypnotic susceptibility and a measure of conformity to a majority group opinion in an Asch type experiment involving judgements of line lengths. Based on these results, Shames
concluded that "hypnotic susceptibility is a reasonable predictor of conformity, and both appear to be tied to the construct of suggestibility" (p. 563). However, the "hypnotizability" test used in Shames' study, the Eye-roll Levitation method (Spiegel, 1974), is questionable as a valid measure of hypnotic responsiveness (Spanos & Barber, 1976; Wagstaff, 1981).

The results of a study by Miller (1980) indicate that high and medium susceptible subjects were more likely than lows to incorrectly report "seeing" suggested tachistoscopically-presented syllables when in fact none were presented. Miller interprets this finding as an indication that hypnotic responsiveness predicts to some degree "behavior in another situation, one that appears to have little in common with typical 'hypnosis' but that does involve the effects of some sort of suggestion or response to socially-encouraged expectation" (p. 50). Farthing, Brown, and Venturino (1982) reported that high hypnotizables made more false alarms than lows in a visual signal detection task; these researchers interpreted false alarms as representing a nonhypnotic measure of suggestibility. A study by Wallace, Garrett, and Andstadt (1974) found a correlation between hypnotic responsiveness and (suggested) perceived changes in autokinetic movement, while Hajek and Spacek (1987) reported a small but significant correlation between hypnotic responsiveness and the tendency to report that a light (of constant intensity) had, in the subject's opinion, increased in brightness after such an effect was suggested.

Council and Loge (1988) describe a study in which high hypnotizable subjects reported significantly larger increases in heaviness (on the classic incremental weights task) and odors (on an odors test) than low hypnotizables. As well, highs were significantly more confident in their reports than lows. No significant hypnotizability X context interactions were found, indicating that the greater responsiveness of high hypnotizables was evident both with and without the prior administration of an hypnotic induction procedure. The authors concluded that the results of their study provide evidence of a general factor underlying suggestibility in hypnotic and nonhypnotic contexts. They cautioned
that their methodology rendered their findings only exploratory in nature, as subjects may have been able to connect the nonhypnotic testing with previous testing of hypnotizability; the two studies may have taken place in the same experimental room.

Graham and Greene (1981) found that individuals previously tested as scoring high in hypnotic responsiveness were more likely than those scoring low to contribute to the college alumni fund. The researchers interpret their positive finding as an indication that “hypnotic susceptibility should be related to a person’s response to persuasive communications that are emotional and imaginative.” (p. 353). These authors did not attempt to claim that alumni giving was the result of waking suggestibility, but the possibility of a relationship between response to persuasive communication (requests for charitable donations) and hypnotic responsiveness presents itself.

Support for this position also comes from a study by Malott, Bourg and Crawford (1989) designed to assess the impact of a hypnotic induction and hypnotizability level on response to a persuasive communication. High hypnotizables were found to agree more often with the communication and to produce significantly more favorable thoughts in line with the arguments presented in the communication, than low hypnotizables, in both the hypnotic and nonhypnotic contexts. The authors concluded that both context and “trait” (hypnotizability level) play a significant role in responsiveness to persuasive communication.

The results of a study by Spanos, Gwynn, Comer, Baltruweit, and de Groh (1989) also indicate that hypnotic responsiveness and reaction to social influence tactics may be related, and provide evidence of the cross-situational suggestibility of subjects high in hypnotic susceptibility. In a study designed to assess the impact of hypnosis and hypnotizability on eyewitness recall, suspect misidentification, and response to cross examination, Spanos, et al. found that independent of the use of hypnosis, subjects pretested as high in hypnotic responsiveness were more likely to misattribute suggested characteristics to a robbery suspect than low susceptibles during mock interrogation, and to subsequently reverse
their misattribution under cross-examination. In other words, subjects high in hypnotic responsiveness were more likely than lows to give in to the interpersonal pressure exerted by two experimenters (the interrogator and the cross-examiner) during two separate questioning sessions.

In a series of studies conducted by Sheehan and his associates, hypnotizable subjects made more errors in response to misleading questioning than did their insusceptible counterparts, independent of the administration of an hypnotic induction (Sheehan & Tilden, 1983, 1986; Sheehan & Grigg, 1985; Sheehan, 1985, Experiment 6). However, in many of the studies, hypnotic responsiveness was confounded with experimental condition (hypnotic induction for the high susceptibles vs. task-motivation or simulation of hypnosis for the lows), rendering impossible an examination of the effects of hypnotizability level alone on errors in response.

Thus, the findings with respect to the relationship between hypnotic responsiveness and social influencibility are inconsistent. It appears that higher levels of hypnotizability may be associated with greater responsiveness to persuasive communication when these communications are presented in a direct, authoritarian manner (Hull, 1933; Malott, Bourg, & Crawford, 1989; Spanos, et al., 1989), but when the attempts at influence are less direct, the relationship becomes more tenuous (Hajek & Spacek, 1987; Hull, 1933; Moore, 1964).

Another possible confound exists in several studies in which a relationship has been found between hypnotic responsiveness and social influencibility. In some of the above studies (e.g., Sheehan & Tilden, 1983, 1986; Sheehan & Grigg, 1985; Sheehan, 1985; Spanos et al., 1989) subjects were tested for hypnotic responsiveness and nonhypnotic suggestibility within the same testing session or at least within the same experimental laboratory, i.e., within the same testing context. This problem raises the possibility of cross-over effects occurring in these studies. Subjects in these studies knew their pretested levels of hypnotic responsiveness, and may have responded to subsequent suggestibility testing based on their conceptions of how a “highly hypnotizable” or “nonhypnotizable”
subject should respond. The findings of four recent studies (de Groot, Gwynn, & Spanos, 1988; Council, Kirsch, & Hafner, 1986; Drake & Nash, 1991; Spanos, Arango, & de Groot, 1991) provide evidence of a context effect in testing correlates of hypnotizability. It may be the case that a relationship between hypnotic and nonhypnotic suggestibility may only be found when subjects are able to determine the connection between the two testing contexts.

Individual differences in responsiveness to social influence have also been investigated in a productive line of research carried out by Gudjonsson and his colleagues (Gudjonsson 1984, 1987a; Gudjonsson and Clark, 1986). These studies, similar to the Spanos et al (1989) and Sheehan (1985; Sheehan & Tilden, 1983, 1986) studies, involve investigations of the effects of leading questioning on recall. In particular, Gudjonsson’s research involves assessing the effects on individual responding of the interpersonal pressure exerted during police questioning. This form of social responsiveness has been labelled “interrogative suggestibility”.

Historical Background to Interrogative Suggestibility

Binet (1900) first introduced the concept of “interrogatory” suggestibility at the turn of the century. Binet measured this form of suggestibility using the picture report test, which involved asking subjects a series of leading questions concerning a picture they had been shown. The degree to which they were led by the suggestive questions provided an index of interrogatory suggestibility. Similar procedures were used by subsequent researchers such as Stern (1938) and Burtt (1948) in applied settings, and more recently by Loftus (1979) in a forensic setting. Loftus (1979) postulated that post-event information such as leading questions produce distortions of memory because they are phrased in such a way as to suggest the desired response, be it correct or incorrect. The conclusions drawn by Loftus (1979; Loftus, Schooler, & Wagener, 1985) have come under recent attack, however. McCloskey & Zaragoza (1985a, 1985b) have argued that misleading
post-event information does not produce actual impairments in memory. The influence of misleading information, according to these authors, is limited to those subjects who either don’t recall the original information, or who have encoded both sources of information, but select the post-event information simply because they trust the experimenter’s memory more than their own.

Binet’s conceptions of the suggestive effect of leading questioning on memory have been largely ignored by present-day researchers attempting to classify suggestibility. Reasons for this may be that the majority of recent research in suggestibility has been concerned either with hypnotic suggestibility in particular, or with delineating the psychometric properties of the available tests, rather than investigations of the phenomena they measure (Evans, 1967; Gheorghiuc, 1989; Gudjonsson, 1987a). Studies that did attempt to investigate interrogative suggestibility involved complicated laboratory settings that are not easily replicated (Cohen & Harnick, 1980; Powers, Andriks, & Loftus, 1979; Young, 1929). Perhaps a more compelling reason for the lack of research into Binet’s interrogatory suggestibility is the fact that Binet’s groundbreaking work has never been completely translated from its original French text into English. As well, there appeared to be a lack of a suitable objective psychometric instrument for measuring this type of suggestibility (Gudjonsson & Gunn, 1982).

The Gudjonsson Suggestibility Scale

For this reason, Gudjonsson developed a scale of interrogative suggestibility to measure individual differences in response to leading questioning (Gudjonsson, 1984a, 1984c, 1986a, 1986d; Gudjonsson & Clark, 1986). The Gudjonsson Suggestibility Scale (GSS) is considered an indirect test of suggestibility in that subjects are not aware of the real purpose of the study, but rather are told that the scale involves a test of memory. Interrogative suggestibility is defined as “the extent to which, within a closed social interaction, people come to accept messages communicated
during formal questioning, as a result of which their subsequent behavioral response is affected" (Gudjonsson & Clark, 1984, p. 84).

In short, the procedure of the GSS is as follows: subjects are read a short narrative story about a robbery, are given an opportunity to verbally recall the story, and then asked a series of 20 questions related to the story. Many of the questions contain false premises, questioning subjects on details not actually presented in the story. After responding to these "suggestive" questions, subjects are told that many of their answers were incorrect, and therefore the questioning must be repeated. Subjects are told at this point to try to be more accurate in their answering. The scale allows for a measure of the tendency of the subjects to yield to leading questions, and to shift their answers from previous responses following the interpersonal pressure of criticism or negative feedback. Yield scores are calculated as the number of suggestive questions on which the subject simply acquiesces or provides one of the false alternatives. A Shift score represents the number of questions for which the subject provides differing responses on the two recall trials.

Five of the questions are true questions, in that the correct response is an affirmative one (e.g. "Did the woman have a husband named Simon?"). The other fifteen questions are suggestive in nature, and are of three general types. Leading questions, such as "Did the woman's screams frighten the assailants?" and "Did the woman's clothes get torn in the struggle?", ask about details not contained in the actual story. Affirmative questions also ask about information not contained in the story, and contain no salient premises, but tend to have a certain suggestive effect in that they have an affirmative response bias (Gudjonsson, 1984a). An example of an affirmative question is "Were the assailants convicted six weeks after their arrest?". False alternative questions each contain two incorrect alternatives, implying the presence of objects, persons, or events not included in the story, such as "Did the woman hit one of the assailants with her fist or handbag?" and "Were the assailants armed with guns or knives?".
The narrative passage is similar to that in the Weschler Memory Scale, but considerably longer so that subjects are unable to remember all of the details. As in the Weschler scale, the passage can be parsed into individual facts, and the number of these facts recollected (out of a possible 40) provide a continuous measure of memory recall.

Properties of the GSS

The GSS has been found to possess adequate levels of internal consistency (Gudjonsson, 1984a; Singh & Gudjonsson, 1987) and high test-retest reliability (Gudjonsson, 1987b). The construct validity of the GSS as a measure of suggestibility has been demonstrated in several studies (Gudjonsson, 1983, 1984c, 1986, 1988b; Gudjonsson & Lister, 1984; Gudjonsson & MacKeith, 1988; Haraldson, 1985). For example, Gudjonsson (1984c) compared the GSS scores of two groups of criminal suspects; alleged "false confessors" (individuals who had retracted earlier confession statements) and "deniers" (those who had made no admissions despite forensic evidence against them). False confessors scored significantly higher in interrogative suggestibility than deniers. Further, it was found in another study (Gudjonsson & Singh, 1984a) that grade students' GSS scores correlated significantly with teachers' ratings of suggestibility.

Interrogative suggestibility has been found to be related to a number of external variables. Positive correlations have been found with measures of compliance (Guðjónsson, 1989a, 1990), social desirability (Gudjonsson, 1983; Tata & Gudjonsson, 1990), neuroticism (Gudjonsson, 1983), the EPI Lie scale (Gudjonsson, 1984a), perceptual defensiveness and belief in witchcraft and precognition (Haraldson, 1985), acquiescence (Gudjonsson, 1986), fear of negative evaluation (Gudjonsson, 1988a), evaluative and state anxiety (Gudjonsson, 1988a), external locus of control, and perceived distance between the self and the experimenter in terms of competence, power and control (Gudjonsson & Lister, 1984). GSS scores have been found to correlate negatively with intelligence and memory recall (Gudjonsson 1983, 1990), self-esteem and internal
locus of control (Gudjonsson & Lister, 1984; Singh & Gudjonsson, 1984), assertiveness (Gudjonsson, 1988b), and suspiciousness and anger (Gudjonsson, 1989b).

Manipulated factors found to influence interrogative suggestibility as measured by the GSS include the form of questioning: misleading vs. objective (Register & Kihlstrom, 1988), negative feedback (Tata & Gudjonsson, 1990), and manipulated expectations and anxiety level (Hansdottir, Thorsteinsson, Kristinsdottir & Ragnarsson, 1990).

Other factors have been hypothesized to influence interrogative suggestibility, but were found in one or more studies to be nonsignificant predictors. Such factors include age (Gudjonsson, 1984a), hypnotizability level (when the GSS is administered after a hypnotic induction; Register & Kihlstrom, 1988), manipulated stress levels (Tata & Gudjonsson, 1990), instructions to the subject to “fake a bad performance on the test” (Smith & Gudjonsson, 1986), perceptions of the experimenter (Singh & Gudjonsson, 1984), psychoticism and extraversion (as measured by the EPI; Gudjonsson, 1983; Haraldsson, 1985), traditional religious beliefs, superstition, and beliefs in psi phenomena and extraordinary life forms (Haraldsson, 1985).

Interrogative Suggestibility and Other Forms of Suggestibility

The relationship between interrogative suggestibility and other forms of suggestibility has yet to be established. Gudjonsson (1987; Gudjonsson & Clark, 1986) argues that there are theoretical reasons for viewing interrogative suggestibility as a distinct type, which “bears little resemblance to the traditional definitions of suggestibility, whether classified into ‘primary’ and ‘secondary’ phenomena, or ‘primary’, ‘challenge’ and ‘imagery’ suggestibility” (Gudjonsson, 1987, p. 353). Primary suggestibility, as measured by the Body Sway test, has been found to be related to hypnotic susceptibility, but unrelated to other forms of suggestibility (Evans, 1967; Eysenck & Furneaux, 1945; Stukat, 1958). Most of the tests measuring Eysenck & Furneaux’s conceptions of secondary
suggestibility (Inkblot Suggestion, Odor Suggestion, and Heat Illusion, for example) also seem to tap responses unlike those tapped by the GSS. One exception, however, is Binet's (1900) previously mentioned Picture Report test. In this test, "[subjects] were shown a painting of a church interior for 30 sec.; then the picture was removed and 14 questions regarding various details in it were asked. Five of these questions contained suggestions that certain details were contained in the picture which actually were not in the picture. The number of these suggestions accepted by the [subject] constitutes his score on the test" (Eysenck & Furneaux, 1945, p. 486). As is evident from the above description, subjects' acceptance of misleading questioning plays a role in both the GSS and the Picture Report test. Response to this test has found to be independent of hypnotic susceptibility (Eysenck & Furneaux, 1945). Duke (1964) labelled response to the Picture Report suggestion "conformity". Eysenck and Furneaux (1945), along with Abraham (1962) and Evans (1967), state that a better name for this secondary kind of suggestibility might be "gullibility". As mentioned earlier, subsequent investigations have failed to find a consistent "secondary factor" of suggestibility, however, and the results of studies which include the Picture Report test indicate low and inconsistent correlations between this and other tests of suggestibility.

One distinguishing feature of interrogative suggestibility is that it involves a questioning procedure, in which the questioning is primarily concerned with past experiences and events. "The [subsequent] importance of memory recollections and knowledge states ... make interrogative suggestibility very different from traditional types of suggestibility which are almost exclusively concerned with the motor and sensory experiences of the immediate situation" (Gudjonsson, 1987a, p. 352).

Gudjonsson (1987a) has stated his belief that interrogative suggestibility more closely resembles Stukat's (1958) secondary suggestibility factor, which was found to be quite unlike Eysenck & Furneaux's (1945) conceptions of secondary suggestibility. Recall that Stukat included in his factorial study tests intended to measure
“prestige” or “personal” suggestibility, in which different subjective influences, such as set, expectations, and need for conformity, direct the individual’s perceptions, memory and judgements. Examples of such tests included the “contradictory suggestion” tests (whereby the examiner contradicts the subject’s judgment in a discrimination task); “co-judge suggestion” tests (measuring the tendency to mirror a co-judge’s response in a discrimination task); and the “weight and line pairs” task, in which subjects were asked to group unequal weights and lines following suggestions that pairs were in fact equal. Stukat considered these tasks to be characterized by interpersonal pressure and influence, such that the individual’s need for conformity is a major determinant in the suggestive process. Stukat also included two “leading questions” tests, but these tasks had rather low loadings on the secondary factor.

Although Gudjonsson and Clark (1987a) argue on theoretical grounds that interrogative suggestibility bears little resemblance to traditional types of suggestibility, no empirical research has been conducted investigating the relationships between interrogative suggestibility and other behavioral or pencil and paper measures of suggestibility or responsiveness to social influence. The present study represents one such attempt.

Interrogative Suggestibility and Hypnotic Responsiveness

The study by Spanos, Gwynn, Comer, Baltruweit and de Groh (1989) involved leading questioning of subject-witnesses during an interrogation in a forensic situation, a procedure which bears many similarities to interrogative suggestibility testing. In the Spanos, et al. study, however, the stimulus material (a convenience store shooting) was a staged event presented via videotape, not a narrative story. After viewing the stimulus video, subjects were interrogated under questioning which implied the presence of a number of characteristics which the offender in the film did not actually possess (e.g. “Did you see the tattoo on the offender’s left
arm?"). Results of this study indicate that, independent of the use of hypnosis during interrogation, high susceptible subjects reported the offender as possessing more of the suggested false characteristics (i.e. "yielded" under interrogation) than did lows; further, highs were more likely to subsequently reverse their responses under cross-examination, "shifting" now in the direction espoused by the second interrogator. Further, during interrogation, more high than low hypnotizables incorrectly selected a mugshot as portraying the offender. The greater tendency of highs to be led during interrogation and then to disavow their testimony under cross examination may reflect a tendency of high susceptibles to comply more than lows to social influence. The social demands of that experimental situation called for subjects to (a) misattribute characteristics when questioned about the offender, (b) misidentify the offender by choosing a mugshot, and (c) admit that their earlier testimony might have been mistaken when questioned by the cross-examiner. These results provide an indication that the responses of high susceptible individuals in a forensic setting may be more reflective of the demands of the interrogation setting than those of low susceptibles. Alternatively, the highs may have been more involved in vividly creating the suggested image called for by the leading questions (cf. Spanos, 1982) and thus the interrogation may have swayed them to report their reproduced image of the offender as being an actual memory. "Thus, the vivid and highly salient images that initially led highs to misattribute characteristics may have also made plausible to them during cross-examination that their images were interrogator-induced suggestions" (Spanos et al., 1989, p. 282). Although these two interpretations suggest differing reasons for high-low susceptible differences, both would predict that highs are more likely to provide "yield" and "shift" responses under interrogation-type situations.

The relationship between interrogative suggestibility and hypnotic susceptibility has yet to be adequately investigated. The results of one study (Hardarson, 1985, cited in Gudjonsson & Clark, 1986) suggest a nonsignificant relationship between interrogative suggestibility and hypnotizability as measured by the Harvard Group
Scale of Hypnotic Susceptibility. The methodology and bases for interpretation of this study are not available for critique, however, since the research was conducted as an undergraduate thesis in Reykjavik, Iceland, and has never been published.

The only published study to involve both Gudjonsson’s scale and a measure of hypnotic responsiveness was conducted by Register and Kihlstrom (1988). These researchers attempted to induce memory errors through the use of the GSS following a hypnotic induction. Although this study included subjects pretested for hypnotic susceptibility (also on the Harvard Scale), several procedural modifications render assessment of the impact of hypnotizability level on interrogative suggestibility unclear. One half of the subjects received a version of the GSS which included “objective” rather than misleading questioning, a major procedural digression from the original GSS. Only low (0-4 HGSMS scores) and high (8-12) hypnotizables were utilized, so correlational assessments were not available. All subjects were tested for yielding on the second questioning trial only following a hypnotic induction; there was no nonhypnotic control group employed. Thus, it was not possible to compare nonhypnotic high- versus low-susceptibles in a repeated measures format similar to the original procedures of the GSS. Further, Gudjonsson’s measure of total suggestibility was not reported by the researchers, and shifts were scored in a manner differing from usual procedures. Given the results of the Spanos et al. (1989) study, it might be hypothesized that high susceptible individuals would be more likely than lows to be influenced by the misleading questioning, and to subsequently report some of the misleading information in later recall trials. An effect of this kind would be evidenced in the Register and Kihlstrom study by a significant three way interaction of hypnotizability, condition, and trials. Although errors of fact were tabulated in the study, and a 3-way interaction between these variables was reported to have reached significance, the authors stated that the interaction was uninterpretable. The only data from this study which can be used to assess the effect of hypnotizability level on an interrogative suggestibility measure prior to the hypnotic induction
involves the number of Yields during the first interrogation. An inspection of the relevant means indeed indicates a tendency for high susceptibles \((M = 12.50, s = 3.89)\) to yield slightly more to misleading questioning than low susceptibles \((M = 11.20, s = 4.49)\). Further, although confidence was assessed for each response, reported confidence scores were transformed into pre-post confidence change scores, and raw confidence scores for Trial 1 were not presented. Thus, the procedures and reported results of the Register and Kihlstrom (1988) study do not allow for any firm conclusions concerning the relationship between interrogative suggestibility, confidence, and hypnotizability.

**Personality Correlates of Interrogative Suggestibility**

As noted earlier, interrogative suggestibility has been found to correlate with measures of compliance, social desirability, acquiescence, fear of negative evaluation, evaluative anxiety, and external locus of control. These individual difference dimensions appear to be tapping common constructs, namely, need for social approval and dependence on an external frame of reference when making judgments. Other published personality scales have also been purported to measure various aspects of these constructs, but their relationship with interrogative suggestibility has yet to be determined.

Snyder’s **Self-Monitoring Scale** (Snyder, 1974) has been designed to assess the extent to which individuals manage their social behavior, “play to the audience”, and take into account subtle social norms during interaction (Snyder & Monson, 1975). High self-monitors tend to regulate their self-presentation by behaving in accordance with the situation in which they find themselves. Subsequent factor-analyses of the internal structure of the self-monitoring scale (Briggs, Cheek, & Buss, 1980) have revealed that rather than being a unidimensional construct, self-monitoring consists of at least three distinct components: acting, extraversion/sociability, and other-directedness. The **acting**
dimension, which includes items such as “I would probably make a
good actor” and “I could look anyone in the eye and tell a lie with a
straight face (if for a good end)”, has been purported by some to
measure impression management (Tobey & Tunnell, 1981). Others
(e.g. Briggs, Cheek, & Buss, 1980) have argued that the scale
measures not the degree of impression management, but rather the
ability to entertain, read lines, and maintain a stage presence; this
does not necessarily imply that the person will attempt impression
management in personal interactions. The extraversion subscale
appears to measure a willingness to engage in social interaction and
to be the centre of attention, as indicated by the items “I feel a bit
awkward in company and do not show up as well as I should,” and
“At a party, I let others keep the jokes and stories going” (both
items are reverse-scored). This scale correlates highly (r = .51)
with the extraversion subscale of the Eysenck Personality Inventory
(Eysenck & Eysenck, 1968). The other-directedness subscale
includes the items “In order to get along and be liked, I tend to be
what other people expect me to be rather than anything else,” and “I
would not change my opinions (or the way I do things) in order to
please someone else or win their favor” (reverse scored). This scale
emphasizes the willingness to please others and to conform to the
social situation (Briggs, Cheek, & Buss, 1980), by attending to
others for cues regarding appropriate behavior (Tobey & Tunnell,

In an empirical investigation of the self-monitoring construct
relevant to interrogative suggestibility, Lassiter, Stone, and
Weigold (1988) exposed high and low self-monitoring individuals to
misleading information concerning the description of a previously
seen video, and found that high self-monitors exhibited greater
susceptibility to the leading questions than low self-monitors. This
result led the researchers to conclude:

“This concern for the situational appropriateness of their
behavior presumably causes high self-monitoring individuals
to be more attentive to possible cues in the behavior of
others that could help guide their self-presentation... (and)
high self-monitoring individuals' greater desire for potentially useful information... may actually be a liability when the available information is erroneous or false" (pp. 537-538).

Given the above interpretations of self-monitoring, as well as the results of the Lassiter et al. (1988) study, it is plausible that suggestibility in an interrogative setting might be predicted by self-monitoring, and in particular by the other-directedness subscale, since both it and interrogative suggestibility seem to be measuring in part the degree to which individuals base their behavior (or responses) on cues provided by others. The predictive powers of the two other subscales, extraversion and acting, are less obvious.

The Concern for Appropriateness (CFA) Scale is purported to measure the tendency to comply with the social demand characteristics of the situation (Lennox & Wolfe, 1984). The scale can be broken down into two subscales: Cross-Situational Variability (CSV) and Attention to Social Comparison Information (ASCI) (Wolfe, Lennox, & Cutler, 1986). The CSV scale is said to "tap behavioral variability that is a consequence of continually tailoring one's actions so as to avoid disapproval" (Wolfe, Lennox, & Cutler, 1986, p. 357), and includes items such as "I tend to show different sides of myself to different people" and "Different situations can make me behave like very different people." The ASCI subscale contains the items "When I am uncertain how to act in a social situation, I look to the behavior of others for cues", and "The slightest look of disapproval in the eyes of someone with whom I am interacting is enough to make me change my approach". The results of two studies provide indications that the total scale concern-for-appropriateness scores are predictive of conformity, in terms of likelihood to be induced by others into drug use (Johnson, 1989), and as a tendency to modify previously expressed values in line with group conformity pressures (Lennox, Wolfe, & Cutler, 1986). Consequently, it is hypothesized that the Concern for Appropriateness scores, and in particular the attention to social
comparison information subscale score, may be related to interrogative suggestibility.

Fenigstein, Scheier and Buss's (1975) **Self-Consciousness Scale** consists of three subscales: public and private self-consciousness, and social anxiety. Public self-consciousness is a measure of individuals' concerns about how others evaluate them, and is typified by the items "I usually worry about making a good impression", and "I'm concerned about the way I present myself". This scale has been found to correlate significantly with the conformity scale of the Jackson Personality Inventory (Tunnell, 1984), and with sensitivity to social rejection (Fenigstein, 1979). Private self-consciousness, on the other hand, involves the tendency to attend to private aspects of the self (Buss, 1980), and includes such items as "I reflect about myself a lot", and "I'm generally attentive to my inner feelings". This subscale has been found to correlate with self-esteem and emotionality (Turner, Scheier, Carver, & Ickes, 1978). Social anxiety, the third subscale, is typified by the items "I get embarrassed very easily" and "I feel anxious when I speak in front of a group." This scale is said to reflect discomfort in the presence of others, and has been found to correlate negatively with self-monitoring, social desirability, and sociability (Turner et al, 1978). Subjects defined as "pure publics" (those high in public but low in private self-consciousness) are said to be particularly likely to engage in patterns of self-presentation which maximize approval and minimize disapproval in social situations (Doherty & Schenkler, 1991). These individuals, accordingly, are hypothesized to also score high on interrogative suggestibility.

Susceptibility to influence by others has been found to be associated with low **self-esteem** (McGuire, 1968, 1985; Petty & Cacioppo, 1981). The results of a study by Cox & Bauer (1964) indicate that individuals low in self-esteem tend to comply with others' suggestions in order to avoid social disapproval. Janis (1954) found that subjects low in self-esteem were more readily
influenced by others in a persuasive communication task, while Berkowitz & Lundy (1957) contend that persons low in self-confidence are more susceptible to peer pressure. Zimbardo and Lieppe (1991) account for this tendency in terms of belief defense. According to these researchers, low self-esteem individuals have a low regard for themselves as well as for their own beliefs and attitudes. “Consequently, low self-esteem people may be less motivated to defend their beliefs, and they may give up more easily when they do attempt defense by counter-arguing” (pp. 225-226).

Several studies, however, have found that the relationship between self-esteem and suggestibility may be mediated by gender. A well-established finding in the literature on personality and persuasibility is that males low in self-esteem are more readily persuaded than males high in self-esteem across a number of situations (Asch, 1958; Berkowitz & Lundy, 1957; Janis, 1954; see also Cox & Bauer, 1964 for a review of earlier studies). This relationship has generally not been found for females, however (Janis & Field, 1959).

In a study involving the GSS, Singh and Gudjonsson (1984) measured self-esteem with the semantic differential technique on 12 scales of bipolar adjectives (including Incompetent-Competent, Timid-Forceful and Intelligent-Unintelligent). They report that self-esteem was significantly related to interrogative suggestibility. Although this study included equal numbers of males and females, the authors did not report correlational analyses separated by sex. The present study included Rosenberg’s (1965) measure of self-esteem, and allowed for an assessment of the relationship between interrogative suggestibility and esteem for males and females. The relationship between self-esteem and reported confidence in recall of the narrative GSS story was also assessed, in order to test if indeed subjects low in self-esteem tend to be less confident in their ability to recall on a memory-testing task than those high in self-esteem.

The Eysenck Personality Inventory (EPI) and the revised Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck, 1968,
1975, respectively) allow for the measure of two personality dimensions neuroticism and extraversion. Neuroticism (as opposed to stability) refers to general emotional over-responsiveness and liability to neurotic breakdown under stress (Eysenck & Eysenck, 1968), and is measured on the EPI by items such as “Do you often think about things that you should not have said or done?” and “Are your feelings easily hurt?” Extraversion is defined by the authors as a tendency towards outgoing, impulsive and sociable inclinations, and is tapped by items such as “Can you usually let yourself go and enjoy yourself at a lively party?” and “Do you often long for excitement?” The EPI also provides a Lie scale, or response distortion scale, meant to detect attempts to falsify responses. As with scales of social desirability, the Lie scale includes items to which only a very few individuals could honestly give an affirmative answer (e.g. “Have you ever been late for an appointment or work?” (reverse scored), and “Are all your habits good and desirable ones?”), but which subjects may endorse in order to portray themselves in a socially-desirable manner. Gudjonsson (1983) found that interrogative suggestibility correlated significantly with both the EPI Neuroticism scale (r = .28) and the Lie scale (r = .34). Haraldson (1985) also found a correlation between GSS scores and the Lie scale (r values ranging from .23 to .34), but not, however, for the Neuroticism scale (r’s between -.02 and .12). The present study assessed the relationships between each GSS score and the three EPI subscales.

Eysenck, Nias, and Eysenck (1971) argued, on the basis of the results of a study with school aged children, that the size of the negative correlation between the Lie and Extraversion scores (from the Junior Eysenck Personality Inventory) can be seen as an index of social acquiescence or conformity. It has not yet been determined if a similar pattern will emerge for interrogative suggestibility in an adult population. This was assessed in Study 1 by comparing the correlation coefficients between Lie and Extraversion scores for high vs. low GSS suggestibles.
Effects of Sex and Birth Order on Social Influencibility and GSS Scoring

Two subject variables, gender and birth order, have been found in past research to play important roles in studies of social influence, conformity, and compliance. Empirical findings with respect to these two variables are presented below.

**Sex differences:** The majority of early research comparing males and females with respect to response to social influence found males to be more likely than females to resist group pressures in a wide variety of testing situations. For example, such results were obtained in persuasion studies conducted by Patel and Gordon (1960) using a synonym matching task with high school students; Reitan and Shaw (1964) utilizing tests requiring the judgment of geometric areas and line lengths; Whittaker (1965) using the autokinetic effect; and Pettigrew (1968b) in asking children to estimate the sizes of different objects. Each of these studies involved assessing the extent to which males and females resist attempts at persuasion by the experimenter.

Females have been found to be more swayed by reciprocity appeals (Eagly & Carli, 1981; Fink et al, 1975), and to describe conformity as a positive virtue (Santee & Jackson, 1982). In a review of the literature on conformity, Nord (1969) concluded that "...it has also been well established, at least in our culture, that females supply greater amounts of conformity under almost all conditions than males" (p. 198). Most of the researchers in the area account for gender differences in influencibility in terms of cultural role prescriptions, females having been raised to "go along" and behave as expected, while males are more often rewarded for independence and innovation. For example, a series of studies by Janis and Field (1959) utilized a test of persuasibility purported to measure susceptibility to influence by persuasive communications. Results of their studies again indicated that males were significantly less persuasible than females. Janis and Field interpret this effect as due to "...different sex roles in our society, particularly with respect to intellectual independence and docility"
in many aspects of everyday life” (p. 59). They caution that it is “necessary to consider separately the male and female subsamples when studying the correlations between personality factors and persuasibility” (p. 59).

Sistrunk and McDavid (1971) cite 14 studies published between 1955 and 1963 (the “heydays” of conformity research) whose results supported the proposition of women yielding more to social pressures than men. However, these researchers go on to describe several further studies in which significant sex differences failed to emerge, and conclude that situational, personality, and motivational factors, as well as the sex of the influencer, all play critical roles in the conformity process, and that studies finding significant sex differences may have failed to adequately account for these mediating factors. Sistrunk and McDavid concluded that:

“...it appears clear that the simple and sovereign explanation of sex differences in conforming behavior as a function of cultural prescriptions for the female role is grossly inadequate, and that a disregard for particular characteristics of the behaving male or female together with the particular nature of the judgmental tasks which have been employed in experimental studies of conformity may have contributed to artificially inflated observations of sex-determined differences” (1971, p. 64).

The results of a meta-analysis by Eagly and Carli (1981) provided support for the contention that women conform more in group situations than men. However, they noted that almost 80 percent of the influencibility studies were carried out by males, and these male researchers tended to obtain larger sex differences (in the direction of greater female conformity) than did female researchers. In general, experiments authored by women showed no sex difference. It may be the case that the sex differences in conformity research may be due in large part to an artifact of the experimental methodology. One reason for the apparent trend of male researchers producing more significant differences between
the sexes may be that female researchers may choose to report findings of no sex differences more so than male researchers. Another reason may be the stimuli involved in conformity studies. A study by Sistrunk and McDavid (1971) varied the nature of the items used to elicit group pressure. Females were found to conform most on items that were familiar to men, while males conformed most on those more familiar to females. On items that were equally familiar to both males and females, no sex differences in conformity were found.

The one study of interrogative suggestibility that included gender as an independent factor (Gudjonsson & Lister, 1984) found no significant mean differences between males and females on suggestibility. There was, however, a tendency for the sexes to show different correlational patterns. The correlations between suggestibility and locus of control, competence, and potency was found to be higher for males than females.

**Birth Order:** A number of studies have investigated the relationship between birth order (in terms of familial position) and social influence. Sears (1950) found that in mothers' descriptions of their children, and in teachers' descriptions of their students, first-born children were rated as more dependent than later-borns. Sears' two studies employed very small sample sizes, and he was reluctant to draw any but tentative conclusions. Schachter (1959) cited an unpublished thesis by Ehrlic (1958) which indicated that first-born and only males tended (p=.06) to conform more than later-born males on a test of influencibility, as measured by the subjects' shift in opinion from their independent rating of a case-study to a rating made after "census" results were presented to them. First-born individuals were also found in this study to be more anxious and dependent on social relations.

Dittes (1961) found that experimentally manipulating the degree of "peer acceptance" had no effect on the behavior of later-borns, while the behavior of first-borns varied widely with variations in the regard that they believed others held for them. Schachter (1964) studied affiliation choices among fraternity and sorority members, and found that first-born, more so than later-
borns, preferred to associate with "popular" peers, leading Schachter to conclude that first-borns conformed more to normative choices than did later-borns.

Arrowood and Amoroso (1964) found that first-borns tended to yield to group opinion with greater frequency than later-borns. Furthermore, when confronted with an individual whose views differed from their own, first-borns were more likely to reject both the differing opinions and the person who held them. Based on these findings, Arrowood and Amoroso drew the conclusion that first-borns were more dependent than later borns.

Staples and Walters (1961) studied susceptibility to group pressures as a function of birth order. Among subjects apprehensive about the stated possibility of an electrical shock during an autokinetic task, first-borns perceived greater (suggested) movement of a stationary light, and perceived it more quickly, than later-borns. This finding led the researchers to conclude that first-borns were more responsive to the suggestions of others than later-borns.

Of the studies described above, three (Dittes, 1961; Sears, 1950; and Schachter, 1964) did not differentiate between males and females, and two used only male subjects (Ehrlic, 1958) or only females (Staples & Walters, 1961). These methodologies precluded the assessment of gender differences, or the interaction of gender with birth order, with respect to social influencibility. The results of at least one study, however, indicated the relationship between susceptibility to social influence and birth order is mediated by gender. Sampson (1962) reported that first-born males were less resistant than later-borns to the influence of a presumed expert on a topic. First-born females, on the other hand, were found to be more resistant than later-borns. However, the procedures used in this experiment appear to qualify such a conclusion. Subjects in the study may have been able to interact amongst themselves prior to making their responses, and it may be the case that in resisting the influence of the expert, the subjects may well have been responding to the influence of their own peer group (Warren, 1966).
Study 1: Interrogative and Hypnotic Suggestibility

Study 1 represents an investigation into the relationships between interrogative suggestibility, hypnotic responsiveness, and dimensions of personality. Unlike the Register and Kihlstrom (1988) study, all subjects were tested on the GSS without the use of a preceding hypnotic induction. A version of the GSS story modified for a Canadian population was used, and recall confidence was assessed in two ways. Subjects reported the confidence with which they believed they could recall the details of the story prior to each narrative recall, and they were asked to report their degree of confidence in their response to each of the 20 interrogation questions.

Subjects in Study 1 also completed a number of personality scales, allowing for assessment of the relationships between interrogative suggestibility and each of self-esteem, self-monitoring, public and private self-consciousness, concern for appropriateness, neuroticism, and extraversion. Further, the subjects' sex and birth order were treated as independent variables to assess possible differences between first born and later born males and females on interrogative and hypnotic suggestibility.

Study 1, in short, represented an investigation into the relationship between hypnotic responsiveness (as measured by the CURSS), interrogative suggestibility (as measured by the GSS), and various personality measures hypothesized to be related to social influencibility. The impact of the modifications to Gudjonsson's interrogative suggestibility (i.e. multiple experimenters; live versus taped presentation of the narrative) on suggestibility scores is assessed, and the degree of relationship between confidence in recall and suggestibility was examined.
STUDY 1 Method

Subjects:

Subjects, consisting of Introductory Psychology students, were contacted to participate in a study involving memory and personality, after having completed the Carleton University Responsiveness to Suggestion Scale (Spanos et al, 1983). Subjects were not made aware that the two testing sessions were related, and the two sessions were run by different experimenters.

Procedure

Two experimenters were trained in the conduct of the GSS, and each ran 30 males and 30 females, for a total N of 120 subjects. Subjects, tested individually, were seated in the experimental room in front of a large desk, behind which sat the experimenter, wearing a white lab coat. Subjects were given a brief introduction to the study, and read and signed an informed consent agreement. Subjects were told that they would listen to a short story, and that they should listen carefully because later they would be asked to repeat the story. Subjects were then presented with a short narrative story, concerning a woman whose purse was stolen while she was on vacation in Spain (see Appendix A for a complete transcript of the narrative story). One half of each experimenter’s subjects were read this narrative aloud, the other half listened to the narrative on audiotape. After hearing the narrative, subjects were asked to give a rating of how confident they were that they could recall the details of the story, on a scale of 1 (not at all confident) to 10 (completely confident). Subjects then recalled the story aloud. Their recall was audio-recorded for later scoring. Once the subjects stopped their description, the experimenter prompted them once by asking if they could recall anything more about the story.

Subjects were next informed that they would be asked a number of questions about the story, and that once they had given their answer to each question, they would be asked to give a rating
of their confidence in their answer, again on a 1 to 10 scale. Subjects were then asked a series of 20 questions (see Appendix B) calling for fixed alternative answers (e.g. yes/no, one/two, tall/short), followed each time by a request for a confidence rating.

Five of these questions were “true” questions, which related to information actually presented in the narrative (e.g. “Did the woman have a husband named Simon?”). The other 15 questions asked about information not presented in the narrative, and represented “suggestive”, or leading, questions (e.g. “Did the woman’s clothes get torn in the struggle?” and “Were the attackers tall or short?”). Once the 20 questions were answered, the experimenter looked over the response sheet, and then said to the subject, “You have made a number of errors. It is necessary to go over the questions once more, and this time, please try to be more accurate”. This negative feedback instruction was given to all subjects, independent of their actual accuracy of recall. The questioning was then repeated, and again confidence ratings were obtained.

Subjects were then asked to complete 3 questionnaires; Fenigstein’s Self-Consciousness Inventory (Fenigstein, Scheier, & Buss, 1975; see Appendix C), Lennox and Wolfe’s (1984) Concern for Appropriateness scale (Appendix D), and Snyder’s (1974) Self-Monitoring scale (Appendix E). Upon completion of these questionnaires, subjects were again asked to give a 1-10 confidence rating of their ability to recall the story, and once again their recall was audiotaped. Subjects then were given three more questionnaires to complete: the Eysenck Personality Inventory (Eysenck & Eysenck, 1968; Appendix F), the short form of Rosenberg’s (1965, 1979) Self-Esteem Scale (Appendix G), as well as demographic information (Appendix H). Finally, subjects were given an oral debriefing along with a written debriefing sheet, course credit was assigned, and any questions the subject had concerning the study were addressed.

GSS scoring: The GSS as originally developed by Gudjonsson measures two separate aspects of interrogative suggestibility: the extent to which subjects “Yield” to leading questions by answering
with one of the false alternative responses or by simply agreeing, and the degree to which subjects "Shift" by changing their responses after negative feedback. A total suggestibility score is obtained by summing Yield (from the first questioning) and Shift scores. The interrogative suggestibility testing situation also lends itself to the measure of other aspects of memory retention and distortion. Narrative recall scores were obtained by counting the number of correct facts recollected (out of a maximum of 40) on each of the two recall trials. The leading questions contain a number of incorrect facts (e.g. "Did the woman have one or two children?" when in fact no mention of children was made). The number of these false facts "recalled" by each subject during the second recall trial was taken as a measure of "memory intrusions", which assess the degree to which subjects incorporate misleading information into subsequent recall.
Results

GSS variables: The GSS testing procedure used in the present study produced the following scores (with their corresponding ranges):
- Narrative Recall: number of correct items freely recalled on each of two trials: Immediate and Delayed (0-40);
- Prompted Recall: number of correct items recalled on each trial following the prompt for additional information (0-40);
- Total Recall: computed as the sum of Narrative and Prompted Recall for each trial (0-40);
- Recall Confidence: for each narrative recall (0-10);
- Intrusions: the number of incorrect facts from the interrogation questions subsequently reported during second recall (0-15);
- Average Question Confidence: computed on each trial as the average confidence rating on the twenty interrogative questions (0-10);
- Yield: on each trial, the number of suggestive questions on which the subject acquiesced or responded with one of the presented false alternatives (0-15);
- Shift: the number of questions on which the subject gave differing responses on the two interrogation trials (0-20);
- Total Suggestibility: computed as the sum of Yield on trial one and Shift scores (0-35).

Inter-rater reliability: Content analyses were performed on each subject’s audiotaped narrative recall to obtain Total Recall and Intrusion scores. In order to obtain estimates of inter-rater reliability, content analyses were conducted for 20 subjects by each of the two experimenters. The inter-rater correlations for these variables equalled .97 for Total Immediate Recall scores, .92 for Total Delayed Recall, and .91 for Intrusion scores. These high intercorrelations indicate that the scoring criteria for the content analyses of these variables is sufficiently objective to produce reliable Recall and Intrusion scores from subjects’ audiotaped recall of the narrative story.
Descriptive statistics for the GSS scores: The present study involved a number of modifications of the traditional GSS testing procedure, including a Canadian version of the narrative story, the use of two experimenters, live and taped presentations of the narrative story, and measures of question and recall confidence. Further, subjects in the present study consisted of Carleton University introductory psychology students. Past populations sampled for the GSS have included student nurses, nursing assistants, Icelandic university students, professionals, laborers, forensic patients, delinquent boys, and false confessors to crimes. It is of interest to compare the scores obtained by the present sample to those previously collected, in order to assess the effects of the procedural differences as well as differences between sampled populations. Table 1 shows the means and standard deviations for Immediate and Delayed Recalls, Yields, Shift, and Total Suggestibility scores for the present study, along with those of 11 previously reported studies (which included a total of 17 different subject samples).

Shift and Total Suggestibility scores appear to be higher in the present study than in many of the previous studies. It should be noted, however, that the Shift scoring procedures used in most of these earlier studies were more conservative than those of the present study. Shift scores in the present study were tallied according to the modifications suggested by Singh and Gudjonsson (1987). Using their criteria, shifting on the 5 “True” questions, (along with the 15 “Suggestive” questions), is included in the total Shift score. Although this does tend to involve higher Shift scores, this scoring procedure has been found to increase the internal consistency of the Shift factor (Singh & Gudjonsson, 1987). In the present study, Shift scores were not greatly affected by the scoring method employed. Subjects generally responded correctly to all 5 “True” questions, and rarely shifted responses to these questions on the second trial (45 shifts of a possible 600; 7.5% of possible shifts). Computing Shift scores using the original criterion decreases the present sample’s Shift mean from 4.40 to 4.03, and the Total Suggestibility mean from 10.20 to 9.83.
### Table 1

Means for GSS scores in the present study and previously published studies

<table>
<thead>
<tr>
<th>Study (see below)</th>
<th>Yield 1</th>
<th>Yield 2</th>
<th>Shift</th>
<th>Total Suggest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (sd)</td>
<td>M (sd)</td>
<td>M (sd)</td>
<td>M (sd)</td>
</tr>
<tr>
<td>Present</td>
<td>5.8 (2.9)</td>
<td>7.2 (3.2)</td>
<td>4.4 (3.1)</td>
<td>10.2 (4.9)</td>
</tr>
<tr>
<td>A</td>
<td>4.2 (3.4)</td>
<td>6.1 (3.3)</td>
<td>2.7 (2.2)</td>
<td>6.7 (NA)</td>
</tr>
<tr>
<td>B</td>
<td>4.1 (NA)</td>
<td>5.4 (NA)</td>
<td>3.1 (NA)</td>
<td>7.1 (NA)</td>
</tr>
<tr>
<td>C</td>
<td>6.6 (3.0)</td>
<td>7.8 (3.8)</td>
<td>3.0 (2.6)</td>
<td>9.6 (4.4)</td>
</tr>
<tr>
<td>D1</td>
<td>3.9 (3.3)</td>
<td>4.8 (4.0)</td>
<td>2.4 (2.2)</td>
<td>6.3 (5.2)</td>
</tr>
<tr>
<td>D2form1</td>
<td>6.5 (4.3)</td>
<td>7.8 (4.7)</td>
<td>4.7 (3.6)</td>
<td>11.2 (6.5)</td>
</tr>
<tr>
<td>D2form2</td>
<td>7.2 (4.0)</td>
<td>8.5 (4.7)</td>
<td>4.6 (3.9)</td>
<td>11.8 (6.5)</td>
</tr>
<tr>
<td>D3form1</td>
<td>6.0 (3.7)</td>
<td>6.9 (4.1)</td>
<td>3.8 (2.3)</td>
<td>9.8 (5.3)</td>
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<tr>
<td>D3form2</td>
<td>6.2 (4.0)</td>
<td>7.0 (3.9)</td>
<td>3.4 (2.2)</td>
<td>9.6 (6.0)</td>
</tr>
<tr>
<td>E</td>
<td>7.2 (2.4)</td>
<td>NA</td>
<td>3.3 (2.7)</td>
<td>10.5 (3.2)</td>
</tr>
<tr>
<td>F</td>
<td>3.7 (2.4)</td>
<td>NA</td>
<td>2.3 (2.2)</td>
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<tr>
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<td>6.3 (3.6)</td>
<td>7.5 (3.1)</td>
<td>4.2 (2.2)</td>
<td>10.5 (3.2)</td>
</tr>
<tr>
<td>G2</td>
<td>1.8 (1.0)</td>
<td>1.3 (1.2)</td>
<td>1.4 (1.3)</td>
<td>3.0 (2.1)</td>
</tr>
<tr>
<td>H</td>
<td>4.8 (3.2)</td>
<td>NA</td>
<td>2.9 (1.9)</td>
<td>7.7 (4.0)</td>
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<td>8.1 (4.3)</td>
</tr>
<tr>
<td>K1</td>
<td>4.2 (2.6)</td>
<td>5.2 (3.1)</td>
<td>2.8 (2.7)</td>
<td>7.0 (4.2)</td>
</tr>
<tr>
<td>K2</td>
<td>4.9 (3.3)</td>
<td>5.6 (3.4)</td>
<td>3.4 (2.2)</td>
<td>8.3 (4.4)</td>
</tr>
</tbody>
</table>

Recall 1 | Recall 2
---------|---------|
      | M (sd)  | M (sd)  |
Present | 21.5 (5.9) | 20.9 (6.0) |
A       | 26.0 (6.0) | 25.0 (6.0) |
B       | NA       | NA      |
C       | 16.1 (5.5) | 14.9 (5.6) |
D1      | 24.6 (5.4) | 23.2 (6.9) |
D2form1 | 12.2 (8.1) | 10.1 (7.4) |
D2form2 | 11.9 (8.3) | 9.5 (7.5)  |
D3form1 | 14.8 (9.1) | 13.0 (8.5) |
D3form2 | 13.9 (8.6) | 13.0 (8.5) |
E       | 14.8 (6.0) | 13.1 (5.6) |
F       | 25.6 (4.2) | NA      |
G1      | NA       | NA      |
G2      | NA       | NA      |
H       | 25.4 (7.2) | NA      |
I1      | 16.9 (6.6) | NA      |
I2      | 17.2 (4.1) | NA      |
J1      | 21.4 (5.8) | NA      |
J2      | 21.2 (6.1) | NA      |
K1      | 22.9 (5.9) | NA      |
K2      | 22.1 (7.0) | NA      |

Note: NA = data not available.

### STUDY SOURCE

<table>
<thead>
<tr>
<th>STUDY</th>
<th>SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present</td>
<td>Present Study I</td>
</tr>
<tr>
<td>A</td>
<td>Tata &amp; Gudjonsson (1990)</td>
</tr>
<tr>
<td>B</td>
<td>Gudjonsson (1988a)</td>
</tr>
<tr>
<td>C</td>
<td>Gudjonsson (1986)</td>
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### POPULATION & PARTICULARS

Intro. Psychology students
Nurses & Assistants, "relaxed/criticized" group:
Professionals
Laborers

(cont’d...)

<table>
<thead>
<tr>
<th>STUDY</th>
<th>SOURCE</th>
<th>POPULATION &amp; PARTICULARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>Gudjonsson (1987b)</td>
<td>Hospital staff</td>
</tr>
<tr>
<td>D2</td>
<td>&quot;</td>
<td>Forensic patients &amp; clients</td>
</tr>
<tr>
<td>D3</td>
<td>&quot;</td>
<td>Forensic patients</td>
</tr>
<tr>
<td>E</td>
<td>Smith &amp; Gudjonsson (1986)</td>
<td>Manual workers; “nonfaking” group</td>
</tr>
<tr>
<td>F</td>
<td>Haraldsson (1985)</td>
<td>Icelandic University students</td>
</tr>
<tr>
<td>G1</td>
<td>Gudjonsson (1984b)</td>
<td>False confessors to crimes</td>
</tr>
<tr>
<td>G2</td>
<td>&quot;</td>
<td>Deniers to crimes later found guilty</td>
</tr>
<tr>
<td>H</td>
<td>Singh &amp; Gudjonsson (1984)</td>
<td>Nurses; Session 1 only</td>
</tr>
<tr>
<td>I1</td>
<td>Gudjonsson &amp; Singh (1984a)</td>
<td>Delinquent boys</td>
</tr>
<tr>
<td>I2</td>
<td>&quot;</td>
<td>“Normal” boys</td>
</tr>
<tr>
<td>J1</td>
<td>Gudjonsson &amp; Lister (1984)</td>
<td>Males from various occupations</td>
</tr>
<tr>
<td>J2</td>
<td>&quot;</td>
<td>Females &quot; &quot; &quot;</td>
</tr>
<tr>
<td>K1</td>
<td>Gudjonsson (1984a)</td>
<td>“Normal” males from various occupations</td>
</tr>
<tr>
<td>K2</td>
<td>&quot;</td>
<td>“normal” females &quot; &quot;</td>
</tr>
</tbody>
</table>
The average Yield 1 score of 5.8 and Yield 2 score of 7.2 are each within one standard deviation of most other samples' scores. As could be expected, our scores are considerably above the average for samples of deniers to a crime (who were later found guilty) and professionals (predominantly university professors), while being below the average obtained by manual workers and laborers (who as a group were lower than average in intelligence) and by false confessors to a crime (who would be expected to score high in yielding in an interrogative situation; Gudjonsson, 1984b).

Recall scores obtained in the present study are likewise higher than the average obtained by laborers and manual workers, forensic patients, and delinquent boys, while being approximately the same as Recall scores of professionals and Icelandic university students.

Subjects in the present study incorrectly recalled on average approximately two of the false "facts" that had been presented during questioning (M=1.93, s=1.91). The distribution of these Intrusion scores was positively skewed, and ranged from 0 (n=32) to 9 (n=1). Although no previous studies included a tally of such Intrusions, one study (Tata & Gudjonsson, 1990) reported an average of 3.6 (s=2.0) "confabulations" (errors) during delayed recall, while another (Smith & Gudjonsson, 1986) reported a mean of 0.4 (s=0.6) "distortions" in terms of direct changes of names, places, or circumstances. In the present study, the majority of subjects (88 of 120) intruded at least one false "leading" fact into subsequent testimony.

Unlike previous studies, the present investigation included measures of confidence for each narrative recall as well as for each of the 20 interrogative questions. In each case, confidence ratings were obtained on a 1 to 10 scale. Collapsed across the other independent variables, narrative confidence dropped from an average of 6.04 (s=1.58) on the immediate recall to 4.83 (s=1.86) on the delayed recall. Scores in each instance are approximately normally distributed. There was a wide range of displayed confidence in subjects' recall of the narrative, without any apparent floor or ceiling effects. Average confidence for the interrogative questions also appears to be distributed normally, with a mean of 6.77 (s=1.44;
range of 2.30 to 9.60) on the first questioning, and 6.71 (s=1.54; range of 1.60 to 10.00) during the later questioning. Confidence appeared to be higher for the "true" questions (M=8.15, s=1.62) than for the "suggestive" questions (M=6.31, s=1.60), however, means are collapsed over true and false questions for subsequent analyses. This was done due to (a) the relatively low number of true questions (i.e., 5), (b) the fact that subjects almost invariably answered these true questions correctly and displayed high levels of confidence in these answers, and (c) not until it was found that question-type failed to emerge as either a significant main effect or interaction with other variables in any of the subsequent analyses involving question confidence.

**Intercorrelations among GSS scores:** Correlations among the GSS measures are presented in Table 2. As can be seen, the Yield, Shift, and Total Suggestibility scores are moderately intercorrelated (all r's > .35, p < .001), as are the four measures of confidence (all r's > .37, p < .001). Further, recall confidence is moderately correlated with narrative recall on both the first (r = .42, p < .001) and second (r = .38, p < .001) trials. Average question confidence on trials 1 and 2 was found to be unrelated to yielding (all r's < .13, n.s.) and Intrusions (r = -.11, n.s.), but negatively correlated with Shifting (r = -.15, p < .05). Thus, subjects who had displayed low levels of confidence in their responses during the first round of interrogative questioning tended to shift their answers on the second round. However, accuracy on the questions (as inversely measured by yielding) and on the narrative recall (as inversely measured by Intrusions) were found to be unrelated to confidence measures. Thus, the findings of the present study replicate the lack of an accuracy/confidence correlation reported in several previous eyewitness studies (e.g., Sanders & Warnick, 1981; Wells, Ferguson, & Lindsay, 1981; Yarmey, 1979).

The best predictor of Total Suggestibility was found to be subjects' level of correct recall of the narrative story: subjects with better recall tended to be less suggestible than those with poorer recall levels. (r=-.34, p < .001). Total suggestibility
### Table 2

**Intercorrelations among GSS Scores**

<table>
<thead>
<tr>
<th></th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 NarCon1</td>
<td>0.67**</td>
<td>-0.12**</td>
<td>-0.12</td>
<td>-0.08</td>
<td>-0.12</td>
<td>0.05</td>
<td>0.37**</td>
<td>0.38**</td>
<td>0.42**</td>
</tr>
<tr>
<td>2 NarCon2</td>
<td>-0.11**</td>
<td>-0.15**</td>
<td>-0.16**</td>
<td>-0.17**</td>
<td>0.06</td>
<td>0.44**</td>
<td>0.52**</td>
<td>0.38**</td>
<td>0.32**</td>
</tr>
<tr>
<td>3 Yield 1</td>
<td>0.64**</td>
<td>0.35**</td>
<td>0.81**</td>
<td>0.29**</td>
<td>0.03</td>
<td>0.02</td>
<td>-0.30**</td>
<td>-0.35**</td>
<td></td>
</tr>
<tr>
<td>4 Yield 2</td>
<td>0.59**</td>
<td>0.75**</td>
<td>0.30**</td>
<td>0.13</td>
<td>-0.06</td>
<td>-0.35**</td>
<td>-0.35**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Shift</td>
<td>0.84**</td>
<td>0.24**</td>
<td>0.15**</td>
<td>0.20**</td>
<td>0.03</td>
<td>-0.26**</td>
<td>-0.22**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Total Sugg.</td>
<td>0.33**</td>
<td>0.12</td>
<td>-0.11</td>
<td>-0.34**</td>
<td>-0.34**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Intrusions</td>
<td>0.13</td>
<td>0.14</td>
<td>-0.14</td>
<td>-0.16**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Av Q Conf 1</td>
<td>0.87**</td>
<td>0.30**</td>
<td>0.28**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Av Q Conf 2</td>
<td>0.21**</td>
<td>0.20**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Total Recall 1</td>
<td>0.87**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 Total Recall 2</td>
<td>0.87**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
- NarCon1 = narrative confidence on trial 1 (immediate recall);
- NarCon2 = narrative confidence on trial 2 (delayed recall);
- Total Sugg. = Total Suggestibility;
- Av Q Conf 1 = Average confidence for questions on trial 1;
- Av Q Conf 2 = Average confidence for questions on trial 2;
- * = \( p < .05 \)
- ** = \( p < .01 \)
generally displayed only weak correlations with narrative and question confidence (r's < .18). Interestingly, the number of facts incorrectly intruded into the second narrative recall (i.e., Intrusions) was more highly correlated with Total Suggestibility (r = .33, p < .001) than with recall accuracy on either trial 1 or 2 (r = -.14, n.s. and -.16, p < .05 respectively). In other words, it does not appear to be a poor memory for the story which is predictive of memory intrusions, but rather the suggestibility level of the subject.

**Effects of Sex, Birth Order, Experimenter, and Presentation Mode**

The separate and combined effects of sex of the subject, birth order (in terms of first or only born vs. later born), Experimenter (1 vs. 2), and presentation mode of the narrative story (live vs. taped) on the repeated measures GSS scores were examined with a 2 x 2 x 2 x 2 x 2 doubly multivariate analysis of variance (MANOVA). The dependent variables in this analysis, on each of two trials, were recall scores, yields, narrative confidence, and question confidence.

The results of this 5-way MANOVA revealed significant multivariate main effects (as per Wilk's criterion) for mode of presentation, F(4,101) = 2.82, p < .05, and trial, F(4,101) = 22.53, p < .001. An investigation of the subsequent univariate effects revealed no significant main effect of mode of presentation for any of the four dependent variables, all F(1,104) values < 3.22, n.s. The univariate main effect of trials reached significance for narrative confidence, F(1,104) = 67.70, p < .001; and Yield scores, F(1,104) = 29.24, p < .001. An inspection of relevant means indicated that average narrative confidence was significantly higher on the first recall (M=6.04, s=1.58) than on the second recall (M=4.83, s=1.86). Further, subjects gave yielding responses significantly more often on the second round of interrogation questions (M=7.23, s=3.19) than on the first (M=5.80, s=2.88). Thus, subjects reported lower levels of confidence, and yielded more following the leading questions and negative feedback from the experimenter. No other multivariate main or interaction effects reached significance in this analysis.
A 2 x 2 x 2 x 2 completely between-subjects MANOVA was performed on 3 dependent measures: Total Suggestibility, Shift, and Intrusion scores. (Yield scores were not included in this analysis in order to avoid multicollinearity [Total Suggestibility is simply a linear combination of Yield 1 and Shift scores], and because of the high correlation between Yield and Total Suggestibility measures). The independent variables involved in this analysis were sex, birth order, experimenter, and presentation mode. With the use of Wilk's criterion, the combined DVs were not significantly affected by any of the main effects nor interactions between the independent variables, multivariate F(3,102) values ≤ 1.47, p > .25. In other words, neither of the subject variables (gender or birth order), nor the methodological manipulations (due to experimenter or live vs. taped presentations), had a significant effect on total interrogative suggestibility scores, tendency to shift answers after negative feedback, or incorporation of misleading facts into subsequent recall.

Hypnotizability/GSS Relationships

Relationships between interrogative suggestibility scores and CURSS:O (objective), CURSS:S (subjective) and CURSS:OI (objective-involuntary) scores were assessed using hierarchical multiple regression (MR) techniques. The separate and interactive effects of sex of the subject were included in these analyses to assess possible sex differences in the predictability of interrogative suggestibility (Gudjonsson & Lister, 1984). The regression model included the GSS scores (Yield 1, Yield 2, Shift, Total Suggestibility, Intrusions, and confidence measures) as dependent variables. These variables were regressed on the three CURSS dimensions (entered on Block 1), sex (dummy coded, entered on Block 2), and coded vectors representing the interactions between sex and the CURSS scores (entered on Block 3). The results of these analyses are presented in Table 3. As is evident, the complete regression model failed to account for a significant proportion of the variance in any of the dependent measures; all F(7,112) values < 1.73, n.s.). In other words,
Table 3

Regression of GSS Scores on CURSS Scores, Sex, and CURSS X Sex Interactions

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>R</th>
<th>R²</th>
<th>F(7,112)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield 1</td>
<td>.21</td>
<td>.04</td>
<td>0.74 n.s.</td>
</tr>
<tr>
<td>Yield 2</td>
<td>.20</td>
<td>.04</td>
<td>0.65 n.s.</td>
</tr>
<tr>
<td>Shift</td>
<td>.22</td>
<td>.05</td>
<td>0.65 n.s.</td>
</tr>
<tr>
<td>Total Suggestibility</td>
<td>.21</td>
<td>.05</td>
<td>0.77 n.s.</td>
</tr>
<tr>
<td>Narrative Conf. 1</td>
<td>.23</td>
<td>.05</td>
<td>0.79 n.s.</td>
</tr>
<tr>
<td>Narrative Conf. 2</td>
<td>.27</td>
<td>.07</td>
<td>1.25 n.s.</td>
</tr>
<tr>
<td>Question Conf. 1</td>
<td>.25</td>
<td>.06</td>
<td>1.07 n.s.</td>
</tr>
<tr>
<td>Question Conf. 2</td>
<td>.26</td>
<td>.07</td>
<td>1.14 n.s.</td>
</tr>
<tr>
<td>Total Intrusions</td>
<td>.31</td>
<td>.10</td>
<td>1.73 n.s.</td>
</tr>
</tbody>
</table>

Note: R, R², and F values reported above represent those for the complete regression models with CURSS:O, CURSS:S, CURSS:OI, sex, and their interactions as independent variables.
none of the hypnotic susceptibility measures, nor their interactions with sex, were successful in predicting any of the GSS scores. This lack of significant prediction is an indication that interrogative suggestibility and confidence on the GSS is independent of hypnotic suggestibility as measured by the CURSS.

Since narrative recall and GSS suggestibility scores were found to be moderately correlated, it may be the case that hypnotic responsiveness scores predict GSS measures only once the effects of levels of recall are controlled for. To test this hypothesis, hierarchical MR procedures were conducted regressing the five GSS suggestibility measures on CURSS scores and vectors representing sex and the CURSS X sex interactions, with narrative recall scores entered into the regression equations first. The results of these analyses are presented in Table 4. The overall regression model was found to significantly predict Yield 2, Total Suggestibility, and 3 confidence measures. The overall model was not significant for Yield 1, Shift, Intrusions, or question confidence 2 (although it trended towards significance, $p < .10$, in each case); accordingly, the hierarchical regressions were not performed for these variables. Results of the hierarchical regressions for Yield 2, Total Suggestibility, and the other 3 narrative confidence scores revealed that narrative recall levels predicted a significant amount of the variability in each of these measures. However, the variables in Blocks 2 through 4 (CURSS scores, sex, and their interactions, respectively) failed to add significantly to the prediction of these suggestibility and confidence measures. In other words, even once the effects of narrative recall levels are accounted for, hypnotic responsiveness scores, sex of the subject, and their interactions failed to account for a significant proportion of the variance in these GSS suggestibility and confidence scores.

**Questionnaire/GSS Relationships**

In order to investigate the separate and interactive relationships between interrogative suggestibility, sex, and the included personality measures, hierarchical regression analyses
Table 4

Hierarchical Regression of GSS Suggestibility Scores on Narrative Recall, CURSS Scores, Sex, and CURSS X Sex Interactions

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Block 1</th>
<th>Blocks 2, 3, &amp; 4</th>
<th>Complete Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$R$</td>
<td>$R^2$</td>
<td>$F(1,118)$</td>
</tr>
<tr>
<td>Yield 1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Yield 2</td>
<td>.32</td>
<td>.10</td>
<td>13.08**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shifts</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total Suggest.</td>
<td>.31</td>
<td>.10</td>
<td>12.58**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Intrus.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Narrative Conf. 1</td>
<td>.43</td>
<td>.19</td>
<td>27.49**</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Narrative Conf. 2</td>
<td>.38</td>
<td>.15</td>
<td>20.07**</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question Conf. 1</td>
<td>.30</td>
<td>.09</td>
<td>12.04**</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Question Conf. 2</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: Block 1 enters Narrative Recall; Block 2 (B2) enters Sex; Block 3 (B3) enters CURSS:O, CURSS:S, and CURSS:OI Scores; Block 4 (B4) enters the Sex X CURSS interactions. $R^2_{ch} = \text{Change in } R^2; F_{ch} = \text{F value for change in } R^2$. * $p < .05$ ** $p < .001$
were conducted regressing selected GSS scores on the subscales of the administered questionnaires. Coded vectors representing sex, and the interactions between sex and the subscales, were added into the regression in subsequent blocks. GSS scores acting as dependent variables in these analyses are Yield 1 & 2, Shift, Total Suggestibility, Intrusions, narrative confidence 1 & 2 and question confidence 1 & 2 scores.

As indicated in Table 5, the overall model did not significantly predict Yield 1, Yield 2, Shift, or Total Suggestibility scores. These results indicate that suggestibility on the GSS is not predicted by any of the included questionnaires, nor does sex or the sex X questionnaire interaction aid in the prediction of suggestibility.

The overall model did, however, predict each of the other included GSS scores. Table 5 includes $R^2$ and change in $R^2$ values, as well as F values for the increase in $R^2$, for each step in the hierarchical regression for these dependent variables. With respect to Intrusions, the Block entering the interaction between sex and the questionnaires resulted in a significant increase in $R^2$. In order to assess the relationships between the questionnaire measures and Intrusion scores for this analysis, separate stepwise MRs were performed at each level of sex. Among females, Attention to Social Comparison Information was the only variable to be entered into the prediction of Intrusions, $r = .26$, $F(1,54) = 4.06$, $p < .05$. None of the questionnaires were significant in the prediction of Intrusions among males.

For narrative confidence 1 and 2, again, the sex X questionnaires interaction Block reached significance. Separate regressions for males and females revealed no variable predicting narrative confidence 1 among males. For females, only the Acting dimension of the self-monitoring scale was associated with a significant $R^2$, $R^2 = .09$, $F(1,54) = 5.09$, $p < .05$. For narrative confidence 2 scores, again, the MR for males revealed no significant predictor variables. Among females, the Acting scale accounted for 13% of the variability in the dependent variable, $F(1,54) = 7.76$, $p < .01$. Cross-Situational Variability added significantly to the $R^2$, semi-partial correlation = -.37, $F_{ch}(1,53) = 8.07$, $p < .01$, followed
### Hierarchical Multiple Regressions of GSS and Confidence Measures on Questionnaire Scores

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Block 1 $R^2$ F(12, 107)</th>
<th>Block 2 $R^2ch$ Fch(1, 106)</th>
<th>Block 3 $R^2ch$ Fch(12, 95)</th>
<th>Overall Model $R^2$ F(25, 95)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Sugg.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.48 1.32 n.s.</td>
</tr>
<tr>
<td>Yield 1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.31 1.54 n.s.</td>
</tr>
<tr>
<td>Yield 2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.21 0.90 n.s.</td>
</tr>
<tr>
<td>Shift</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.29 1.39 n.s.</td>
</tr>
<tr>
<td>Intrusions</td>
<td>.12 1.12</td>
<td>.01 1.59</td>
<td>.20 2.07*</td>
<td>.33 1.68*</td>
</tr>
<tr>
<td>Narrative Conf. 1</td>
<td>.12 1.10</td>
<td>.01 0.58</td>
<td>.41 6.19**</td>
<td>.53 3.87**</td>
</tr>
<tr>
<td>Narrative Conf. 2</td>
<td>.23 2.50*</td>
<td>.00 0.30</td>
<td>.20 2.44*</td>
<td>.43 2.59*</td>
</tr>
<tr>
<td>Question Conf. 1</td>
<td>.24 2.63*</td>
<td>.00 0.58</td>
<td>.09 0.92</td>
<td>.33 1.71*</td>
</tr>
<tr>
<td>Question Conf. 2</td>
<td>.24 2.57*</td>
<td>.00 0.28</td>
<td>.12 1.29</td>
<td>.36 1.90*</td>
</tr>
</tbody>
</table>

Note: Block 1 enters the personality measures; Block 2 enters Sex; Block 3 enters the Sex X personality measures interactions. $R^2ch = \text{change in } R^2; F_{ch} = F \text{ value for change in } R^2$. * $p < .05$. ** $p < .001$. 
by Private Self-Consciousness, semi-partial correlation = .32, F_{ch}(1,53) = 5.88, p < .05. No other variables added significant unique contributions to the prediction of narrative 2 scores.

For the two measures of question confidence, only the first block, entering the questionnaires themselves, resulted in significant increments in \( R^2 \). Only the Social Anxiety scale predicted a significant amount of the variability in question confidence 1, \( R^2 = .13, F(1,109) = 16.06, p < .001 \). Self Esteem was found to be a significant predictor of question confidence 2, \( R^2 = .12, F_{ch}(1,109) = 15.12, p < .001 \). Social Anxiety added significantly to the \( R^2 \), semi-partial \( r = -.23 F_{ch}(1,108) = 6.02, p < .05 \), followed by Cross-Situational Variability, semi-partial \( r = -.19, F_{ch}(1,107) = 4.15, p < .05 \). The contributions of the latter two variables, although significant, should be regarded with caution due to their low (i.e., less than .30) semi-partial correlation magnitudes.

The results of the above MRs indicate that the questionnaire subscales do not predict performance on the interrogative suggestibility scale. Some of the subscales do, however, predict subjects' reported confidence in their narrative recall and/or confidence in the accuracy of their responses to the interrogative questions, and some only among female subjects.

Eysenck, Nias, and Eysenck (1971) argue that high Lie scale scores unaccompanied by low Neuroticism scores on the EPI may be interpreted as an index of a strong desire for conformity. In order to test this hypothesis, subjects were divided (using median splits) into those scoring high on both the L and N scales (n = 43) versus all other subjects (n=77). A multivariate Hotelling's \( T^2 \) test was conducted comparing these 2 groups on the dependent measures of Shift and Total Suggestibility scores, as well as the three dimensions of the CURSS. Results of this analysis indicate no significant differences between the groups with respect to these dependent variables. multivariate F(5,115) = 1.02, n.s.

In order to test Doherty and Schenkler's (1991) hypothesis that "pure publics" are more suggestible than other individuals, subjects were divided into two groups. "Pure publics" were defined as those scoring at or above the mean on public self-consciousness and at or
below the mean on private self consciousness (N=25), with all remaining subjects falling into the "other" category (N=95). In order to allow for a liberal test of the hypothesis, multiple t-tests were conducted for each of the following dependent variables: Yield 1 and 2, Shift, Total Suggestibility, Intrusions, and the four measures of subject confidence. Contrary to Doherty and Schenkler's hypothesis, pure publics failed to differ from others on any of the measures of suggestibility or narrative confidence obtained in the present study (all t values < 1.40, n.s.). A significant difference did emerge, however, for confidence on the interrogative questions. On the first trial, pure publics displayed a lower average confidence (M = 6.10, s = 1.22) than did other subjects (M = 6.95, s = 1.43), t(118) = 2.73, p < .01. Similarly significant results emerged on the second trial, with pure publics again reporting lower average confidence (M = 5.88, s = 1.66) than others (M = 6.93, s = 1.43), t(118) = 3.14, p < .01.

Factor analysis of GSS, Hypnotizability, and Questionnaire scores

In order to investigate the extent to which the GSS, CURSS, and questionnaires tap common underlying dimensions of response, a principal components extraction with varimax rotation was performed on the 12 questionnaire subscales, the 4 measures of GSS confidence, Yield 1 and 2, Shift, and Intrusions scores from the GSS. An examination of the scree plot of eigenvalues against factors indicated that 4 factors should be retained. A subsequent 4-factor solution principal axes factor analysis was performed. In this analysis, these first 4 factors accounted for 42.1% of the variance. Table 6 gives the communalities for each variable, along with their varimax rotation loadings on each factor.

Factor 1 appears to be a "Social Confidence" factor, which along with the confidence measures reported for the GSS narratives and interrogations, includes acting, self esteem, and lack of social anxiety. The second factor involves the three dimensions of hypnotizability from the CURSS. No other variables loaded on this factor above the .30 level. The third factor could be labelled a
Table 6

Factor loadings and communalities for GSS, questionnaire, and CURSS measures

<table>
<thead>
<tr>
<th>Variable</th>
<th>h^2</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question Conf. 2</td>
<td>.55</td>
<td>.73</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Question Conf. 1</td>
<td>.53</td>
<td>.71</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Narrative Conf. 2</td>
<td>.51</td>
<td>.69</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Narrative Conf. 1</td>
<td>.34</td>
<td>.55</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>SC: Social Anxiety</td>
<td>.58</td>
<td>-.51</td>
<td>.00</td>
<td>.44</td>
<td>-.33</td>
</tr>
<tr>
<td>Self Esteem</td>
<td>.37</td>
<td>.51</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>SM: Acting</td>
<td>.28</td>
<td>.42</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>CURSS:OI</td>
<td>.59</td>
<td>.00</td>
<td>.89</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>CURSS:S</td>
<td>.78</td>
<td>.00</td>
<td>.88</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>CURSS:O</td>
<td>.79</td>
<td>.00</td>
<td>.76</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Public Self Consc.</td>
<td>.56</td>
<td>.00</td>
<td>.00</td>
<td>.73</td>
<td>.00</td>
</tr>
<tr>
<td>CSA: Att.Soc.Comp.</td>
<td>.45</td>
<td>.00</td>
<td>.00</td>
<td>.67</td>
<td>.00</td>
</tr>
<tr>
<td>EPI: Neuroticism</td>
<td>.36</td>
<td>.00</td>
<td>.00</td>
<td>.55</td>
<td>.00</td>
</tr>
<tr>
<td>SM: Other Directed.</td>
<td>.31</td>
<td>.00</td>
<td>.00</td>
<td>.50</td>
<td>.00</td>
</tr>
<tr>
<td>CSA: Cross-Sit.Var.</td>
<td>.28</td>
<td>.00</td>
<td>.00</td>
<td>.46</td>
<td>.00</td>
</tr>
<tr>
<td>Private Self-Consc.</td>
<td>.14</td>
<td>.00</td>
<td>.00</td>
<td>.28</td>
<td>.00</td>
</tr>
<tr>
<td>EPI: Lie</td>
<td>.05</td>
<td>.00</td>
<td>.00</td>
<td>-.17</td>
<td>.00</td>
</tr>
<tr>
<td>Yield 2</td>
<td>.51</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.68</td>
</tr>
<tr>
<td>Yield 1</td>
<td>.33</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.57</td>
</tr>
<tr>
<td>Shift</td>
<td>.36</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.55</td>
</tr>
<tr>
<td>SM: Extraversion</td>
<td>.57</td>
<td>.52</td>
<td>.00</td>
<td>.00</td>
<td>.55</td>
</tr>
<tr>
<td>EPI: Extraversion</td>
<td>.34</td>
<td>.28</td>
<td>.00</td>
<td>.00</td>
<td>.47</td>
</tr>
<tr>
<td>Intrusions</td>
<td>.09</td>
<td>.00</td>
<td>.00</td>
<td>.00</td>
<td>.30</td>
</tr>
</tbody>
</table>

Note: Off-factor loadings lower in absolute magnitude than .29 are replaced with .00.
"Public Orientation" factor, as it contains the subscales public self-consciousness, attention to social comparison information, neuroticism, other-directedness, and cross-situational variability. The other scales loading on this factor do not seem at first glance to be related to these measures. However, private self-consciousness and the EPI Lie measure each displayed low communalities (.14 and .05) and loaded quite weakly (.28 and -.17), and therefore should be excluded from this factor. The fourth factor is clearly an interrogative suggestibility factor, as it contains the three GSS measures (Yield 1 and 2 and Shift) along with the measure of narrative Intrusions. Interestingly, the two measures of extraversion also load on this factor (although they are complex variables, which also loaded highly on Factor 1, the Social Confidence factor). Social anxiety also displayed complexity, loading highly on each of the Social Confidence (-.51), Public Orientation (.44), and interrogative suggestibility (-.33) factors. Thus, social anxiety appears to be an attribute common to each of these "social-response" dimensions.

The results of an oblique rotation of these factors (see Footnote 2) indicated low inter-factor correlations: the r values between factors were all less than .17, n.s. Thus, it appears that the four factors identified in this analysis (interrogative suggestibility, hypnotic responsiveness, social confidence, and public orientation) are relatively independent of one another.
Discussion

The present study was designed to assess the degree of relationship between interrogative suggestibility and hypnotic responsiveness, and to identify possible personality variables and measures of confidence predictive of suggestibility. The effects on suggestibility of assessment with multiple experimenters and live vs. taped presentations of the to-be-remembered narrative were investigated. As well, differences between the interrogative performance of the present sample of university students and samples previously tested with the Gudjonsson Suggestibility Scale are investigated. The implications for the assessment of hypnotizability in the forensic context are discussed.

Narrative Recall: The narrative recall levels of the subjects in the present study are most comparable to previous samples composed of nurses and nursing students, Icelandic university students, and professionals (Gudjonsson, 1986, 1988b; Haraldson, 1985; Singh & Gudjonsson, 1984). Considering that recall in forensic contexts has been found to be significantly related to intelligence (Gudjonsson, 1983), and that each of these samples involve individuals who have at least some university education, similarity of intelligence levels, and in particular memory and recall ability, is to be expected. The present sample, however, performed much better on average than laborers, forensic patients, and delinquent boys, groups who may have lower levels of educational background and intelligence, and perhaps different motivations in the experimental setting (Gudjonsson, 1983).

Although recall levels in the present study dropped across trials, this decrease did not reach statistical significance, and the obtained difference was less substantial than found in previous GSS studies in which recall was assessed on two occasions. This difference between results may have arisen due to the shorter time interval between recall trials in the present study (approximately 20 min) compared to earlier studies, in which delays were typically 35 to 50 minutes (Gudjonsson, 1986, 1987b, 1990; Tata &
Although Gudjonsson states his belief that "it is unlikely that the Suggestibility scores are seriously affected if the interval is made less than 50 minutes" (1984a, p. 312), accuracy of recall has been shown to be affected by time intervals in many eyewitness recall studies (Loftus, 1979). Thus, it appears that inter-trial time intervals may be a contributing factor to decrements in recall, perhaps related in turn to increased suggestibility. This effect remains to be empirically validated.

GSS suggestibility scores: Even after correcting for differences in scoring procedures (Singh & Gudjonsson, 1987), yield, shift, and total interrogative suggestibility scores for the present sample were slightly higher than other samples that included university-educated individuals. Most of these other samples, however, involved individuals who have completed a university education (e.g., nurses, doctors, professors), whereas subjects in the present sample were undergraduate students, most of whom were in their first year of university. Future research may help to clarify the relationship, if any, between years of university education and suggestibility.

Differences in the appearance and mannerisms of the "interrogators" (i.e., experimenters) in the different studies may also account for some of this difference. Experimenters in the present study were older than the majority of subjects, and wore white laboratory coats, which may have aided in giving them an appearance of authority. Gudjonsson & Lister (1984) found that suggestibility levels were related to the degree of subjects' perceived distance between themselves and the experimenter in terms of power and control; the assertiveness of the experimenter may therefore be a factor in suggestibility testing. Experimenters in at least one other GSS study (Haraldsson, 1985) were reported to have found it "difficult and embarrassing to give the negative feedback to the Ss" (p. 766). Such an attitude may have been conveyed to the subjects, affecting subsequent yield and shift scoring. Experimenters in the present study repeatedly practised the feedback procedure prior to running subjects, until they felt
confident in their ability to administer the GSS assertively, and reported no qualms in telling the subjects that they had made a number of errors in answering questions.

Suggestibility levels in the present sample were substantially lower, however, than levels obtained by manual workers (Smith & Gudjonsson, 1986), adolescent boys (Gudjonsson & Singh, 1984a), and false confessors to crimes (Gudjonsson, 1984b). These findings seem to substantiate Gudjonsson's (1983, 1988b; Gudjonsson & Clark, 1986) hypothesis that suggestibility may be related to lower intelligence levels and poorer memory recall, both of which have been shown to be present in these comparison samples.

Intrusions: The results of previous studies using the GSS indicate, not surprisingly, that subjects quite often make a number of errors when asked to recall a previously heard narrative (Register & Kihlstrom, 1988; Smith & Gudjonsson, 1986). However, in these studies, any mistakes in recall were counted as errors. Subjects in the present study “recalled” on average approximately two incorrect facts that had been presented to them during leading questioning. These specific errors of recall, labelled “intrusions,” provide a measure of the degree to which individuals incorporate suggestive misleading information concerning an event into their subsequent recall of the event. More than two-thirds of the subjects in the present study intruded at least one incorrect fact. Such effects of postevent information (such as the use of leading questions) on memory have been extensively investigated by Loftus and her colleagues (see Loftus, 1979, for a review; see also Burtt, 1949; Stern, 1938). Based on her research findings in the area, Loftus concludes that exposure to contradictory postevent information may produce permanent distortions in memory, such that memory traces of eyewitnesses may be impaired by subsequent questioning concerning the event. Schooler and Loftus (1986) state their belief that “interrogative suggestibility” (as measured by the GSS) may be a relevant factor in eyewitness testimony in general. The memory-impairment interpretations presented by Loftus (1979; Loftus, Schooler, & Waagener, 1985) have not, however, been universally
accepted. McCloskey & Zaragoza (1985a, 1985b) have argued that misleading postevent information may not produce actual impairments in memory. The influence of misleading information, according to these authors, is limited to those subjects who either don't recall the original information at all, or who have encoded both sources of information, but select the postevent information simply because they trust the experimenter's memory more than their own. A similar controversy has arisen in hypnosis research, whereby some investigators claim that hypnotically-suggested "pseudomemories" may continue to be unshakably believed in post-hypnotically (Orne, 1979; Laurence & Perry, 1983), while other researchers argue that pseudomemory reports are in fact reversible (McCann & Sheehan, 1987) and may simply reflect a contextually-guided reporting bias rather than an actual permanent distortion of memory (Spanos & McLean, 1986; Spanos, Gwynn, Comer, Baltruweit, & de Groh, 1989). Independent of the differing interpretations for the underlying process of pseudomemories or memory impairment, it is clear that individual difference factors, such as those measured by tests of interrogative suggestibility, play an important role in determining the reliability of witness testimony and a subject's susceptibility to suggestive influences.

Correlational Analyses

Confidence ratings: One of the components of Gudjonsson and Clark's (1986) social psychological model of interrogative suggestibility involves subjects' cognitive processing and cognitive appraisals. According to these authors, suggestibility is related to subjects' uncertainty and expectations in the testing context. Accordingly, subjects who display low levels of confidence in their ability to recall should be more suggestible (Gudjonsson, 1983, 1984a). This hypothesis was tested in the present study. Unlike previous studies, the present investigation included measures of subject confidence in their ability to recall the narrative on each trial, as well as subjects' reported confidence in the accuracy of their answers given during each of the two interrogations. Confidence was found to be
unrelated to the number of intrusions in the present study. Narrative confidence did drop significantly between trials; whether this is a result of the passage of time leading to a poorer recollection, or to the presence of the negative feedback prior to delayed recall, remains to be investigated.

**Suggestibility scores:** Although the four confidence measures were found to be highly intercorrelated, only delayed narrative confidence showed any significant degree of relationship with subsequent yielding, shifting, or total suggestibility. Thus, initial levels of reported confidence in subjects' ability to recall the narrative was not predictive of the extent to which they yielded on the first interrogation, but subsequent recall confidence was negatively related to the degree to which subjects yielded and shifted after negative feedback. It appears, then, that the confidence-suggestibility relationship hypothesized under Gudjonsson & Clark's (1986) social-psychological model is found only under conditions of interpersonal pressure by an interrogator. The mediating effects of negative feedback on this relationship requires further research before firm conclusions can be made in this respect, however.

Gudjonsson states that "the two types of suggestibility [i.e., yield and shift] appear to be quite independent in as far as they are poorly correlated and load on separate factors" (1984a, p. 311). Haraldsson reiterated the view that the GSS "measures two fundamentally different aspects of 'interrogative' suggestibility" (1985, p. 765). However, the correlation between these two GSS variables is reported in only one of the 17 empirical studies authored or co-authored by Gudjonsson; his first paper introducing the GSS reported a correlation of $r = .18$ (n.s.) between these measures (Gudjonsson, 1984a). Results of the present investigation, however, indicate significant and substantial positive relationships (accounting for up to 36% of the variability) between yield and shift scores. The degree of independence or association between these variables is a matter for future research, in aid of determining if in fact they are "two types of suggestibility" or simply two measures of one construct, as the results of the present study would indicate.
The best predictor of total interrogative suggestibility was found to be subjects' level of recall on each of the two trials. This result, combined with the observed recall-confidence correlation, concurs with Gudjonsson's contention that "the less Ss remember about the story the more likely they are to distrust their own judgement and rely on cues provided by others" (1984a, p. 312). The number of narrative intrusions, assessed for the first time in the present study, were also found to be highly correlated with suggestibility scores, more so, surprisingly, than with recall scores. It appears therefore that it is not so much a poor memory of the story that leads to intrusions, but rather the overall suggestibility level of the subject. This finding is an indication that those subjects who yield during interrogation and shift answers under negative feedback also tend to incorporate incorrect facts from the misleading questioning into their subsequent narrative recall. It is recommended that future investigations involving the GSS include this simple-to-collect variable of intrusions as a further measure of interrogative suggestibility.

**Recall-Confidence correlations:** Research has indicated that the confidence displayed by an eyewitness has a strong effect on people's (including jurors') assessments of the accuracy of the witness's testimony (Lindsay, Wells, & Rumpel, 1981; Wells, Ferguson, & Lindsay, 1981; Wells, Lindsay, & Ferguson, 1979). Further, the U.S. Supreme Court offered five guidelines in the interpretation of eyewitness testimony in the *Neil v. Biggers* (1972) case: one of the factors said to be indicative of an eyewitness's accurate identification was the level of certainty displayed by the witness when making the identification. However, controlled empirical research of the eyewitness accuracy-confidence relationship has yielded inconsistent results. Wells and Murray (1984), in a review of the literature published between 1974 and 1982, found that subjects' reported confidence levels were significantly correlated with recall accuracy in 13 of 31 separate investigations. In the remaining 18 studies, however, the correlation was nonsignificant. The authors concluded that "the
eyewitness accuracy-confidence relationship is weak under good laboratory conditions and functionally useless in forensically representative settings." (p. 165).

Two measures obtained in the present study can be used as measures of subjects' accuracy. On the second narrative recall trial, the number of Intrusions into recall is an indication of errors of memory, while with respect to answers to the interrogative questions, Yielding can be used to measure inaccuracy. Subjects' reported confidence in their second narrative recall was found to be unrelated to the number of intrusions. Further, subjects' average confidence in their responses to the questions was unrelated to the number of (incorrect) yielding responses they had given, on each of the two interrogation trials. These results indicate that subjects' confidence in their ability to recall the details of, and to correctly answer questions about, a previously heard story is unrelated to their recall accuracy. Thus, in the present study, the confidence-accuracy correlation was again nonsignificant, indicating that subjects' reported levels of certainty are not good predictors of their accuracy.

In the present study, significant correlations were obtained between subjects' confidence in their ability to recall and their actual levels of recall (in terms of number of correct details reported). Prior to interrogation, subjects' recall-confidence correlation was .42, which was higher than the average correlation ($r = .33$) of those that were significant in the studies reviewed by Wells and Murray (1984). Reasons for this finding of a significant relationship between confidence and recall may involve the manner in which recall and accuracy were measured. Recall was assessed in the present study as the number of correct facts recalled (out of the 40 presented to the subject in a narrative story). Prior to verbally recalling the story, subjects were asked to report how confident they were that they could recall the details of the story. Subjects rarely made any errors of commission during the first recall trial. Thus, in the present study, subjects' confidence reports were most likely based on their perceived ability to recollect as many details as possible, a task subjects themselves should be able to predict
quite well. The majority of eyewitness investigations, on the other hand, required subjects to try to identify a suspect from a mock lineup, and then to report their confidence in the accuracy of their identification. Subjects were therefore required to give estimates of the likelihood that the identification they had made is correct. Given that they had already made an identification, subjects may have tried to display consistency by reporting confidence in their selection, whether or not they were actually sure of their selection. This may have reduced confidence-accuracy correlations in these earlier studies.

Subjects in the present study reported confidence on two occasions: both before and after the administration of leading questions and negative feedback from the interrogator. Confidence-recall correlations were found to be slightly lower after this administration \( r = .32 \) than before \( r = .42 \). This finding provides empirical support for Lieppé’s (1980) contention that “as social influences increase, the correspondence of accuracy and confidence should decrease.” (p. 264).

**Effects of Sex, Birth Order, Experimenter, and Presentation Mode:**

**Sex:** A number of studies (most published in the 1960’s and early 1970’s) have reported sex differences with respect to response to social influence (Patel & Gordon, 1960; Pettigrew, 1958b; Reitan & Shaw, 1964), conformity (Santee & Jackson, 1982; Nord, 1969), and persuasibility (Janis & Field, 1959), in terms of higher influencibility among females than males. However, many researchers have subsequently reported that sex differences in these respects may be largely mediated by situational, motivational, and even “likelihood of study publication” factors (Eagly & Carli, 1981; Sistrunk & McDavid, 1971). In terms of sex differences on the GSS, only two studies (Gudjonsson, 1984a; Gudjonsson & Lister, 1984) report interrogative suggestibility scores separated by sex; these studies revealed a (nonsignificant) tendency for females to score higher in suggestibility than males. Among the GSS measures obtained in the present study, no significant sex differences were
found. Males and females failed to differ on any measure of interrogative suggestibility (yields, shift, or total scores). This gender equality should be viewed in light of the presence of three factors which in past research have led to significantly higher influencibility levels in females: the use of male experimenters, a large sample size (resulting in greater statistical power), and a testing procedure (interrogation) which may be interpreted as being more familiar to males than females (Eagly & Carli, 1981; Sistrunk & McDavid, 1981). Thus, the results of the present study concur with those of earlier research (Gudjonsson, 1984a; Gudjonsson & Lister, 1984) in finding no significant sex differences with respect to the usual measures interrogative suggestibility.

Birth order: Several studies have found birth order to be a significant predictor of suggestibility, in terms of dependence on others (Sears, 1950), influencibility and conformity (Schachter, 1958, 1964) and susceptibility to group pressures and suggestion (Staples & Walters, 1961). In each instance, first-borns and only children were found to be more persuasible than later-borns. The results of a study by Sampson (1962), however, indicate that, with respect to resistance to the influence of an expert, birth order interacted with sex, such that first-born males displayed less resistance, while first-born females displayed more resistance, than their later-born counterparts. The individual and combined effects of birth order and sex on interrogative suggestibility was assessed in the present study. No significant effects of birth order, either alone or interacting with sex, were found in terms of narrative recall or confidence, yield, shift, or total suggestibility scores. In other words, despite the formulations of earlier researchers (e.g., Sampson, 1962; Schachter, 1958, 1964; Sears, 1950; Staples & Walters, 1961), birth order was not found to be an influencing factor in interrogative suggestibility.

Mode of presentation and experimenter effects: The present study involved two major procedural modifications from earlier GSS studies. Subjects were presented with the narrative story either
live (as per Gudjonsson’s (1984a) original procedure, and used in 6 subsequent GSS studies), or via tape recording (as per 8 other GSS studies). No study had combined these two modes of presentation to examine their possible effects on suggestibility scores. Further, two experimenters tested subjects in the present study. The only other GSS study to use more than one experimenter (Haraldsson, 1985) found an experimenter effect which approached significance (p = .053) for only the shift factor. Results of the present study indicate that neither presentation mode nor the experimenter effect reached significance for any of the suggestibility variables. Thus, despite the contentions of Gudjonsson and Clark (1986), Haraldsson (1985), and Tata (1983) that the shift factor is more highly related to situational variables than the yield scores, no indication that shifts were effected by the use of multiple experimenters were found in the present study. The experimenter effect may have been more acute in the Haraldsson study due to its use of 3 male and 3 female experimenters, whereas the present study used only 2 senior undergraduate students, both male. Although the sex of the experimenters was not found to be significantly related to any of the GSS factors in the Haraldsson study, the greater number and heterogeneity of experimenters may have led to differences in subjects’ reactions to the negative feedback and interpersonal pressure introduced during GSS testing, particularly with respect to shift scores.

The failure of mode of presentation to exert significant effects on GSS scoring in the present study indicates that the narrative story may be either read aloud or played to the subjects via audiotape with no discernible effects on suggestibility scoring or confidence levels.

GSS / Hypnotizability correlations

Gudjonsson argues that “interrogative suggestibility bears little resemblance to traditional types of suggestibility and requires a separate model of understanding” (1987a, p. 347). However, to date, there have been no published empirical
investigations of the relationship between interrogative suggestibility and the most predominant measure of "traditional" suggestibility, i.e., hypnotic responsiveness. An earlier study utilizing an interrogation format (Spanos, Gwynn, Comer, Baltruweit, & de Groh, 1989) found that high hypnotic susceptibles falsely incorporated suggested characteristics to a previously-viewed criminal offender to a greater degree than lows, which would indicate that suggestibility in a forensic context may be related to hypnotic responsiveness.

Subjects in the present study had each been pretested on the Carleton University Responsiveness to Suggestion Scale (CURSS: Spanos et al., 1983). None of the measures of hypnotic responsiveness (objective, subjective, or objective-involuntariness), either as a main effect or interacting with sex, significantly predicted any of the interrogative suggestibility measures. This result provides evidence that interrogative suggestibility is, as hypothesized by Gudjonsson (1987a), independent of hypnotic responsiveness.

Some studies have reported a significant correlation between hypnotizability and confidence in incorrect statements (Putnam, 1979; Sheehan & Tilden, 1983), while others have failed to find a hypnotizability-confidence correlation (Sanders & Simmons, 1983; Spanos, Gwynn, Baltruweit, Comer, & de Groh, 1989). In the present study, no relationship was found between subjects' pretested levels of hypnotic responsiveness and their reported confidence in their responses to the leading interrogation questions. This lack of relationship, when taken together with the results of the Spanos et al. (1989) study, indicates that hypnotic responsiveness is not a significant predictor of confidence in an interrogation or questioning context.

GSS / Individual difference measures correlations

Previous research has found interrogative suggestibility to be related to measures of compliance, social desirability, acquiescence, fear of negative evaluation, evaluative anxiety, and
external locus of control. These variables seem to share common underlying dimensions: response to social pressures and an external orientation. To determine if other such variables might be predictive of interrogative suggestibility, subjects in the present study completed personality scales purported to measure self-esteem, self-consciousness, extraversion, neuroticism, self monitoring, and concern for social appropriateness. Based on the contentions of Gudjonsson (1984a; Gudjonsson & Lister, 1984) that the psychological mechanisms of interrogative suggestibility may be different for males and females, regressions were performed with sex included as a categorical independent variable.

The most notable finding was that none of the personality measures predicted a significant amount of the variability in any of the GSS variables. The only exception to this finding was a significant positive relationship between the new measure of intrusions and cross-situational variability among females. This result substantiates Wolfe, Lennox and Cutler’s (1986) contention that cross-situational variability (CSV) taps the tendency to “tailor one’s actions so as to avoid disapproval” (p. 357). Including false “facts” gleaned from the interrogation may be a way for female subjects to “make up for” not having reported these “forgotten” facts in their first narrative recall. Johnson (1989) reports that subjects scoring high on the concern for appropriateness (CFA) scale (of which CSV is a subscale) conformed more to group conformity pressures than low CFA scorers. Johnson concluded, based on his results, that the CFA assesses individual differences in susceptibility to peer pressure. The present study represents only partial confirmation of this hypothesis, in that only females showed this effect to any degree, and only for the CSV subscale of the CFA. The reasons why the effect was evident only among females is unclear.

Self esteem was found to be unrelated to GSS measures, contrary to the findings of Gudjonsson & Lister (1984). In that study, their measure of “self esteem” predicted interrogative suggestibility among males. However, self esteem in the present investigation was measured using the short form of Rosenberg’s
(1965) Self Esteem Scale, whereas in the earlier study the construct was defined in terms of perceived distance between the subject and experimenter in terms of control and potency. These latter factors are typical of the procedures suggested in many guides as being effective interrogation techniques resulting in individuals becoming “particularly susceptible to suggestive influences” (Gudjonsson & Lister, 1985, p. 106), which may explain their significant relationships with interrogative suggestibility. Self esteem as measured in the present study, on the other hand, does not involve a comparative evaluation of the “interrogator” per se, but rather is reflective of a more internalized self-concept construct (Rosenberg, 1965, 1979) which itself may not be predictive of response to interpersonal pressure. In other words, Gudjonsson and Lister’s (1985) self esteem measure may be seen as related to “state” anxiety in that it pertains particularly to the testing situation, while the present study’s measure can be seen as being more closely related to “trait” anxiety, in that it measures self esteem across a variety of situations, and not just the interrogative testing setting. Self esteem in the present study was found to be somewhat predictive of question confidence, but only among female subjects.

Other personality variables found to predict confidence during GSS testing in the present study include acting (from the self-monitoring scale), cross-situational variability (from the Concern for Appropriateness scale), and private self-consciousness. Importantly, however, these relationships were found exclusively among female subjects; no significant predictors of confidence were found for males. The reasons for this finding are not obvious. The fact that males generally scored lower (i.e., less “externally oriented” and self-reflective) on the personality measures, with accompanying lower levels of variability, may account for their reduced correlational magnitudes. It may also be that self confidence (and/or confidence in memory) is less affected by situational and motivational factors for males than females. The males reported significantly higher levels of confidence in their memories of the narrative story; this may be a “false front” report of confidence by the males, which may in turn be unrelated to their
actual confidence of the story. Further investigation in this area may reveal possible explanations for the male-female confidence differences observed in the present study.

No evidence was found to support Eysenck, Nias, and Eysenck's (1971) contention that individuals scoring high on both the EPI Lie and neuroticism scales would be more conforming than average. These individuals failed to differ from others with respect to any of the GSS factors.

"Pure publics," as defined by Doherty and Schenkler (1991), were hypothesized by those researchers to be more suggestible than other individuals. Pure publics were not found to score above average on any GSS measure, but they did score lower than others with respect to interrogative confidence, indicating that those scoring high on public self-consciousness and low on private self-consciousness may be more attuned to the interrogator's negative feedback than other individuals.

Factor Analysis

The measures of hypnotic responsiveness, interrogative suggestibility, and confidence, and personality scale scores, when entered into a principal axes factor analysis, yielded four factors. One clear factor was hypnotizability, which included objective, subjective, and objective-involuntariness scores. No other measures loaded significantly on this factor, indicating the statistical independence of hypnotic responsiveness from interrogative suggestibility and the individual difference measures taken in the present study. The GSS measures of yields, shift, and intrusions loaded together on a factor with the two collected measures of extraversion. This result supports the contention that interrogative suggestibility is in fact a separate and distinct type of suggestibility, generally unrelated to various measures of response to external influence. A third factor involved the four measures of confidence obtained during GSS testing, along with self esteem, social anxiety, and acting. This factor appears to be a "social confidence" factor, and indicates that confidence in an
interrogation-type situation is moderately related to self esteem and anxiety in everyday life. The final factor arising from this analysis can be labelled a "public orientation" factor, which included public self consciousness, other-directedness, neuroticism, and attention to social comparison information. The factorial distinctness of this factor indicates that these measures are not highly predictive of suggestibility or responsiveness in either a hypnotic or interrogative context.

Taken together, the results of the multiple regression and factor analytic analyses are quite revealing with respect to the construct of interrogative suggestibility. The generally low correlations of suggestibility both with hypnotizability and the subscale measures, the failure of the suggestibility factor to include any questionnaire subscales (other than extraversion), and the low correlations between the suggestibility factor and the remaining three factors, combine to indicate that interrogative suggestibility as a construct is generally independent of hypnotic responsiveness and the included personality measures of "reaction-to-social-influence". These results support Gudjonsson's (1984a, 1986) hypothesis of the independence of interrogative suggestibility from other types of suggestibility.

**Context Effects**

There are, however, personality variables which have been reported in the literature as predictors of responsiveness or social influencibility. Ward and Loftus (1985) report that introverts and intuitives were more likely to accept misleading postevent information; Larsen and Ketelaar (1991) contend that extroverts show heightened emotional reactivity to mood inductions; and Shames (1981) reports significant correlations between hypnotic susceptibility and a measure of conformity. In each of these studies, the personality correlate was measured in the same context as the influencibility testing. Similarly, absorption has been found to correlate significantly with hypnotizability when assessed
within the hypnotizability context, but the degree of correlation drops significantly or disappears when the testing contexts are divorced (Council, Kirsch, & Hafner, 1986; de Groot, Gwynn, & Spanos, 1988). In the present study, subjects’ level of interrogative suggestibility was assessed in a session seemingly unrelated to hypnotic responsiveness testing (subjects for the present study were drawn from a pool of subjects pretested on the CURSS). Subjects were unaware that they had been selected to participate in the present study based on their hypnotic susceptibility levels, and did not know of any connection between the two sessions. In this situation, there was found to be no significant relationship between hypnotic responsiveness and interrogative suggestibility. Significant hypnotizability-suggestibility correlations may arise only in a testing situation where there are clear contextual connections between the two measures. This hypothesis remains to be tested empirically.

Forensic Implications of the Present Study

The results of the present study have implications for the ongoing debate over the exclusion of witnesses from testifying in court after having undergone hypnotic interrogation. Some researchers (Diamond, 1980; Orne, 1979; Spiegel, 1980) contend that witnesses who have undergone hypnotic memory enhancement procedures should not be allowed to testify in court. Others suggest that the important factor is not the presence of an hypnotic procedure preceding interrogation, but instead the hypnotizability of the witness. Spiegel (1987) has argued that witnesses should be tested for “hypnotizability” prior to testifying. In his view, highly hypnotizable individuals tend to use their superior visual imagery skills to create in their mind's eye “images” of witnessed events. Such images may not in fact be solidly based on reality. They may, according to Spiegel, enter a spontaneous trance while under interrogation. Orne (1979; Orne et al., 1984) further argues that high hypnotizables are particularly susceptible to the influence of leading questions, both in and out of the hypnotic context. If, as the
results of the present study indicate, suggestibility in an interrogation context is unrelated to hypnotic responsiveness, the practice of exclusion of witnesses based on "hypnotizability" levels or the assessment of hypnotizability before interrogation is called into question.

Researchers such as Orne and Spiegel claim to base their contentions on the results of empirical studies which compared response to leading questions, memory confabulations (intrusions), and confidence in memory, in hypnotic vs. nonhypnotic subjects. In fact the findings in this area are quite contradictory. Some studies found that hypnotic subjects reported more intrusions or responded more to leading questions than nonhypnotic subjects (Dywan & Bowers, 1983; Putnam, 1979; Sanders & Simmons, 1983; Stalnaker & Riddle, 1932; Zelig & Biedelman, 1981). However, other studies found no differences between hypnotic and nonhypnotic subjects in this regard (Gregg & Mingay, 1987; McConkey, Labelle, Bibb, & Bryant, 1990a; Spanos et al., 1989; Yuille & McEwan, 1985). Several studies (Labelle & Perry, 1986; Sheehan, Statham, & Jamieson, 1991a; Spanos, Quigley, Gwynn, Glatt, & Perlini, 1991) found that hypnotic procedures increased memory errors only when administered to high hypnotizables. Some studies have found that high hypnotizables exhibited more memory errors than lows regardless of whether they were administered an hypnotic induction before interrogation (McConkey, Labelle, Bibb, & Bryant, 1990a; Sheehan, Statham, & Jamieson, 1991a, 1991b; Spanos, Quigley, Gwynn, Glatt, & Perlini, 1991), and some found no relationship between memory errors and hypnotizability in either hypnotic or nonhypnotic subjects (Sheehan & Tilden, 1983).

Studies that did find differences between hypnotic and nonhypnotic subjects, however, typically did not provide a fair comparison group, because the nonhypnotic conditions often lacked the motivational or expectational cues that were present in the hypnotic conditions. Nonhypnotic conditions in eyewitness-type studies, in particular, have made no attempt to maximize subjects' motivation for, or expectation of, enhanced recall. The implicit assumption when hypnotic procedures are used is that such
techniques will enable high susceptibles to be highly responsive (Barber, 1969). However, some evidence indicates that hypnotic procedures may achieve their effects by interfering with the responsiveness of the low hypnotizables instead of (or as well as) enhancing the responsiveness of highs (Jones & Spanos, 1982). For instance, low susceptibles may think that hypnosis “won’t work” for them, and may not be motivated to respond optimally, nor to use their own strategies to enhance responsiveness. Effects attributed to hypnotizability may in fact be due to this difference in expectational and motivational levels between high and low susceptibles. The results of several studies (e.g., Farthing, Brown, & Venturino, 1982; Spanos, Hodgins, Stam, & Gwynn, 1984; Spanos, McNeil, Gwynn, & Stam, 1984; Spanos, Ollerhead, & Gwynn, 1986) indicate that low susceptibles, when properly motivated, respond to a degree equivalent to that of high hypnotizable hypnotic subjects. In these studies, properly motivated lows showed as much reduction in reported pain as hypnotic highs in a cold-pressor task. Accordingly, it can be argued that the “increased responsiveness” of subjects high in hypnotizability may be an artifact of the context in which subjects’ responsiveness is tested. Subjects in the present study were never led to believe that their responding during the memory task may be related to their pretested level of hypnotizability. For this reason, expectational and motivational differences (between those perceiving themselves as responsive vs. unresponsive to hypnosis) should not have been a factor; in fact, no differences due to hypnotizability were found. It would be of interest in future research to examine if conducting the GSS in the hypnotic context would result in an interrogative suggestibility-hypnotizability correlation.

The forensic use of hypnosis to “enhance” the memory of eyewitnesses to a crime remains a contentious issue (for reviews see Orne, 1979; Smith, 1983; Wagstaff, 1989). Spiegel (1987) has argued that this controversy has been focused on the wrong issue. He argues that of more importance than the use of a hypnotic induction is the hypnotizability level of the subject. Highly hypnotizable subjects, according to Spiegel, may “find themselves
complying to signals implanted by a forceful examiner” (1987, p. 108), and are more amenable or vulnerable to suggestion even without a formal hypnotic induction. The results of the present study provide a test of this hypothesis, and fail to support Spiegel’s contention that high hypnotizables are more likely to be influenced during in an interrogation context. Hypnotizability levels were found to be independent of the degree to which subjects yielded to the interrogator’s leading questions or shifted their answers under negative feedback. Further, high hypnotizables were no more likely than lows to incorporate misleading information (intrusions) into subsequent recall.

In short, the results of the present study indicate that interrogative suggestibility is independent of hypnotic responsiveness.
STUDY 2: DIMENSIONS OF SOCIAL SUGGESTIBILITY

The results of Study 1 indicate an independence between two measures of suggestibility or social responsiveness, namely hypnotic susceptibility and interrogative suggestibility. Further, it was found that these behavioral measures were not well predicted by personality scale measures of reaction to social influence.

Study 2 represents a further investigation of the concept of “social suggestibility”, and its relationships with compliance, conformity, personal orientation, and hypnotic responsiveness. A new scale of Social Suggestibility, containing items designed to delineate various dimensions of social influence, was developed.

Study 2 also involved an assessment of the effects of gender differences, birth-order, and their interaction, as well as a number of measures of social influence, on responses to an “influencibility” (false-norm rating) task and the Social Suggestibility scale.

Exogenous/Endogenous Orientation: In his chapter “The Consciousness of Self”, William James (1890) distinguished among the “social” self (involving how a person perceives that he or she is viewed by others), the “material” self (involving material possessions that form a basis of one’s identity), and the “spiritual” self (one’s private subjective states of consciousness). Contemporary theorists have tended to replace concepts of the spiritual self with the term private self, and James’s social self is more often referred to as the public self. Modern researchers have developed scales to examine the relationship between the public and private selves, including the above-mentioned Self-Monitoring Scale (Snyder, 1974, 1987; Briggs, Cheek, & Buss, 1980; Lennox & Wolfe, 1984); and the public and private Self-consciousness Scale (Fenigstein, Scheier, & Buss, 1975; Buss, 1980). As well, Cheek (1982, 1989) developed an Aspects of Identity Scale to measure personal and social identity orientations. Subsequent research using this scale has determined that people whose identities are based strongly on personal attributes and weakly on social attributes are less concerned with
others' impressions of them, and less resistant to persuasion (Barnes et al., 1988; Hogan & Cheek, 1983).

Lamphere and Leary (1990) constructed the Exogenic and Endogenic Orientation scales to investigate whether the private and public selves are best conceptualized as opposite poles of a single dimension, or as two independent dimensions. A factor analysis of their data strongly support a bidimensional model, and the authors conclude that the endogenic scale, containing items such as "It's important for me to be true to myself" and "I always behave consistently with my personal ethics", reflects responsiveness to personal, private factors, while the exogenic scale, typified by the items "When I am uncertain how to act in certain situations, I look to the behavior of others for cues", and "I think that the old saying 'when in Rome, do as the romans do' is good advice", reflects responsiveness to public, social factors. Accordingly, the endogenic scale was found to correlate highly with personal identity orientation, while the exogenic scale correlated most highly with the self-monitoring other-directedness subscale and the public self-consciousness scale.

The relationship between exogenic and endogenic orientation and the measures of social influence (i.e., the false-norm rating task and the social suggestibility scale) will be assessed in Study 2.

**Social Conformity and Compliance:** The empirical and theoretical literature on conformity and compliance is vast and varied. Furnham (1978) conducted a review of the literature cited in Psychological Abstracts from 1945 to 1977, and formed a bibliography of at least 386 studies in conformity. Most of these articles dealt with experiments using the Asch (1956), Crutchfield, (1955) or Sherif (Sherif & Sherif, 1964) experimental procedures. Although a detailed analysis of the research in conformity and compliance is beyond the scope of this paper, an outline of the research which pertains directly to the present study will be presented.

The classic Asch experiment on conformity proceeds as follows: A single naive subject sits at a table surrounded by a number of experimental "confederates". The "visual judgment" task
presented to the subject is to judge the length of lines on a series of comparisons. Subjects are asked to announce which of three "comparison" lines is equal in length to a presented "standard" line. One of three comparison lines is obviously equal to the standard line, the other two are noticeably different. Subjects announce their answers in the order in which they are seated around the table, the naive subject being seated in the next-to-last position. On the first two trials, the confederates choose the obviously correct matching line. On the third trial, however, each confederate chooses the same obviously incorrect matching line. The subject listens to the others express identical judgments that differ from his own. The subject can then express his own judgment and risk being different from the group (i.e. respond independently), or he/she can give the same answer as the preceding subjects (i.e. conform to a unanimous majority).

Asch (1956) found that almost a third of the 50 naive subjects conformed on at least half of the trials. Most "Yielders" (those who conformed) said that they believed their own perceptions to be correct, but that they yielded to the group pressure so as not to appear different from or inferior to the others. Subsequent studies using the Asch paradigm varied the situational conditions, producing significant effects on rates of conformity. For example, the unanimity of the group was found to play a more important role in bringing about conformity than did the size of the group (Marlow & Gergen, 1969), and having subjects express their judgments privately as opposed to publicly lowered the rates of conforming behavior (Deutsch & Gerard, 1955). The latter finding implied that at least some of the conformity found in the Asch paradigm occurs through compliance rather than through the process of identification or internalization (Kelman, 1961). However, the fact that a substantial degree of conformity was found even when a subject was assured of anonymity implies that mere compliance is not an adequate explanation of these phenomena. It seems that a subject's real opinions, as well as his or her overt behavior, may be altered by group pressure, either because he or she is motivated to define him or herself as a member of the group (identification) or because he or
she accepts the unanimous group view as reliable evidence that he or she is wrong and that the others must be right (internalization; Kelman, 1961).

**Social Conformity:** Pettigrew (1958a), in attempting to understand bigotry and prejudice in South Africa, constructed a 16-item measure of social conformity (the C scale), composed of new items and adaptations from the conformity measures of Hoffman (1953) and MacCrone (1937). The scale is comprised of statements such as “It's better to go along with the crowd than to be a martyr” and “When almost everyone agrees with something, there is little reason to oppose it” and “To be successful, a group's members must act and think alike”. The C scale was found to correlate highly with Afrikaners and English subjects' anti-African Prejudice, indicating that the C scale reflects “a susceptibility to conform (which) may be an unusually important psychological component of prejudice in regions where the cultural norms sanction intolerance” (Pettigrew, 1958a, p. 40).

Pettigrew’s social conformity scale differs in many respects from that used by many contemporary researchers. A study by Stein, Newcomb and Bentler (1987) examined personality correlates of alcohol and hard drug use in young adults, and found that the strongest effect (of earlier personality variables on later substance abuse) was that of early social conformity leading to less hard drug use for both men and women. Social conformity was measured in this study with a 12-item self-rating instrument. The items on the instrument loading on the Social Conformity factor involved law abidance, lack of liberalism, and religious commitment. A second study using the same scale (Castro, Maddahian, Newcomb, & Bentler, 1987) found that social conformity failed to predict incidence of cigarette smoking among adolescents. Pettigrew's (1958a) scale, by contrast, contained items tapping law abidance nor religiosity.

At least one researcher, (Kirkcaldy, 1987), has expressed his view that the Lie scale of the Eysenck Personality Inventory may serve as a measure of social conformity, such that low scorers on the Lie scale [L- individuals] are classified as less conforming than
high scorers. The rationale and construct validity of such a classification remains to be examined.

Although Pettigrew's social conformity scale has not been extensively validated across cultures, the content of the items (e.g. "It is best not to express your views when in the company of friends who disagree with you" and "A person should adapt his ideas and behavior to the group that happens to be with him at the time") indicate that it may also be predictive of conformity to group and social norms in a North American university student population. The social conformity scale will be included as a variable in Study 2, in order to assess its relationships with compliance and social suggestibility.

Compliance has been defined as "the tendency or susceptibility of individuals to comply with requests or obey instructions that they would rather not do, for some immediate instrumental gain" (Gudjonsson, 1989a, pp. 535-536) and is said to occur when "an individual accepts influence from another person or from a group because he hopes to achieve a favorable reaction from the other" (Kelman, 1961, p. 422). Gudjonsson (1989a) argued that the two main components of compliant behavior are 1) eagerness to please and the need to protect one's self image when in the company of others (as per Konoske, Staple, & Graf, 1979), and 2) the avoidance of conflict and confrontation, and fear of people in authority (after Irving & Hilgendorf, 1980). Gudjonsson hypothesized that "when either or both of these components are present, people may on occasions comply with requests and obey instructions which they would normally reject" (1989, p. 536).

Based on this theoretical conceptualization Gudjonsson constructed a scale of social compliance. Compliance as measured by this scale was found to correlate strongly with Pettigrew's (1958) Social Conformity Scale and interrogative suggestibility, and to a lesser degree with acquiescence (on the Winkler, Kanouse, & Ware, 1982, scale) and Neuroticism (from the EPI). Conformity was unrelated to intelligence, age, Extraversion, Psychoticism, and the Lie scale of the EPI. Alleged false confessors to crimes and
incarcerated adults were found to score highest on the scale, whereas university students and academic staff scored low, providing evidence of the construct validity of the scale.

Gudjonsson (1989a) found that the items which had the highest factor loadings measure how subjects report reacting when pressured by people (e.g. "I give in easily to people when I am pressured" and "People in authority make me feel uncomfortable and uneasy"). Because of this, Gudjonsson (1989, p. 538) hypothesized that the questionnaire may be "more similar to Milgram's (1974) construct of 'obedience to authority' than 'conformity to group pressure" as described by Asch (1956). Gudjonsson and Clark (1989a) assert that there are common mediating variables in compliance and suggestibility, namely eagerness to please and avoidance behavior. The relationships between Gudjonsson's compliance scale and dimensions of social suggestibility will be examined in Study 2.

Social Suggestibility Scale

In Study 2, a new scale measuring various dimensions of "social suggestibility" was constructed. The items on this scale were amassed from various published scales including the Self-Monitoring Scale (Snyder, 1974), the Self-Consciousness Scale (Fenigstein, Scheier & Buss, 1975), the Concern for Appropriateness Scale (Lennox & Wolfe, 1984), and the California Personality Inventory. Other items were designed by the experimenter.

The various items on the present scale were chosen as tapping the extent to which individuals:

- adapt their behaviors or opinions to conform to group norms or to impress people;
- follow the crowd and adhere to popular fashion and interest trends;
- consider conforming, following orders, or allowing others to lead the way as appropriate social behavior in most circumstances;
- do "as they are told" or "as expected" rather than make waves, make suggestions or behave according to inner feelings, attitudes and beliefs;
- depend on others for approval, opinions, and advice, and for cues for appropriate behavior;
- are easily convinced and trusting of others;
- tend to lose arguments and have few strong beliefs or opinions;
- demonstrate uncertainty in many social situations;
- are agreeable and yielding, even if they may privately disagree;
- consider other peoples' feelings and desires before acting;
- describe themselves as being generally open to suggestion.

A number of filler items were included in an attempt to lower the face validity of the questionnaire and to mask its true purpose.

As well, 11 items were simply the logical reverse of earlier items (e.g. "I would rather work something out for myself than accept guidance from an expert" vs. "I would rather accept some guidance from an expert than work something out for myself"). This item-reversal procedure was adopted by Sigelman, Budd, Spanhel and Schoenrock (1981) and Gudjonsson (1986) as a measure of acquiescence, the tendency of individuals to answer questions affirmatively regardless of their content (Cronbach, 1946).

As construct validation for the dimensions arising from this scale, scales purported to measure conformity (Pettigrew, 1958a), compliance (Gudjonsson, 1990), and exogenic vs. endogenic orientation (Lamphere & Leary, 1990), were included in the present study.

Influencibility Task

Subjects also completed a "Design Ratings" scale, consisting of attractiveness ratings for a series of simple geometric designs. This scale was modified from one used by Gorassini, McNiven, and Jackson (1990) to examine the degree to which individuals (in their
study, high hypnotizables) adapt their ratings of designs in line with their perceptions of how other high hypnotizables had rated the designs. The purpose of this scale was to assess the degree to which individuals yield to perceived norms when reporting their own subjective judgments. Subjects were asked to rate 30 five-sided line drawings with respect to their “perceived subtle and simplistic attractiveness”. Prior to the task, subjects were told that the experimenter was particularly interested in seeing if they replicated the findings of an earlier study in which ratings were obtained from two groups of subjects: university “dropouts” and university “graduates”. The purported average rating for each group was shown alongside each drawing. Subjects were asked to consider each drawing and circle their rating of the drawing’s attractiveness.

Of the 30 drawings, 16 were presented with at least a 6 point difference between the ratings of the two comparison groups; for half of these, the “university graduates” provided the higher rating, while the “dropouts” were shown as given a higher rating for the other half. For a further 14 drawings, the two groups’ ratings were the same or differed by only 1 point. For 5 of these, both ratings were 8 or above on the 10-point scale, for another five, both were 2 or below, and for the remaining four, both ratings were between 4 and 6. Ratings for these four (noncritical) drawings were dropped from the analyses.

The dependent measures obtained for this task (as modified from Gorassini, McNiven & Jackson, 1990) included:

a) total difference between the subject’s ratings and the university graduates’ ratings, across all 24 critical drawings.

b) total difference between the subject’s ratings and the dropouts’ ratings on these 24 drawings.

c) total difference between the subject’s ratings and “consensus” ratings (drawings which the graduates’ and dropouts’ ratings were within one point of each other).

The first two measures reflect the extent to which subjects base their ratings on those provided by the university graduate and university dropout ratings, respectively, while the third measure
represents an evaluation of the influence of a perceived "consensus" norm on subjects' attractiveness ratings.

Data was also collected on gender, birth order, and pretested levels of hypnotizability, in order to assess the separate and interactive effects of these variables on the obtained measures of social suggestibility.

In short, Study 2 investigated the relationships between personality scale measures of reaction to social influence (compliance, social conformity, acquiescence, exogenic and endogenic orientation), a new scale of social suggestibility, an influencibility (designs ratings) task, and hypnotic responsiveness.
Study 2 Method

Subjects: Subjects in the present study consisted of Carleton University undergraduate students recruited for a questionnaire study involving "Ratings of Geometric Designs". Subjects were run in groups of 5 to 30, and received course credit or $5.00 compensation for their participation.

Procedure: Subjects completed the social suggestibility questionnaire, labelled as a "Social Identification Scale" (Appendix I). On this scale, subjects were asked to indicate, on a 7-point scale, the degree to which each of the presented statements was characteristic of them, with 0 representing "not at all characteristic" and 6 representing "extremely characteristic".

Subjects also completed the "Designs Rating Task" described earlier. The instructions given to subjects preceding the rating task, as well as an example of the task itself, are presented in Appendix J.

After completing the Gudjonsson Compliance scale (Appendix K), the Pettigrew Social Conformity scale (Appendix L), and the exogenic-endogenic orientation scale (Appendix M), subjects were asked to think back to when they were completing the task of rating the designs. Three questions were asked of the subjects:

1) To what extent did you carefully and thoughtfully consider the attractiveness of each design before rating it?
2) To what degree did you consider the ratings of the dropouts and/or graduates while making your own ratings?, and
3) For the designs on which the two groups differed, which groups' ratings, on the whole, seemed more similar to the ratings you had made? (My ratings seemed more like the graduates ratings/dropouts ratings/My ratings seemed unrelated to either groups' ratings).

The first two questions were answered on a seven point scale, with the respective anchor points 0 (labelled "Not at all") and 6
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(labelled "To a great degree"). Each of these questions was preceded with a rational for scoring both high or low (e.g. "When deciding what rating to give each design, some people look to see what kind of ratings other people (that is, the university graduates and dropouts) had given for that design. Some people, on the other hand, pay absolutely no attention to the others' ratings"). The first question was aimed at assessing the degree of cognitive effort the subjects exert in completing the rating task. The second question attempted to tap subjects' reports of influence or consideration of perceived norms on their own behavior in this task. The third question identified those subjects who reported being at least aware of the ratings of one or both groups compared to their own.

The order of presentation of the various scales in this study were: 1) the Designs Ratings scale; 2) the Social Suggestibility Scale; 3) the Exogenic/ Endogenic scale (labelled "Personal Attitude Scale"); 4) the Compliance scale; 5) the Conformity scale (labelled "Social Conventionality Scale"); 6) the "Opinion Scale", with the 3 questions regarding consideration of the graduates and/or dropouts ratings; and 6) a "Demographic Data Sheet" asking for gender and birth order information. This order was used in order to avoid the possibility of carry-over response biases on the rating and social suggestibility scales arising from the completion of the other three measures.
Results

Factor Analysis of Social Suggestibility Scale

Items on the 124-item social suggestibility questionnaire were examined for exclusion prior to conducting a factor analysis. The 11 items which were reversals of earlier items, making up the acquiescence scale, were eliminated. Filler items, items included solely to complete the embedded self monitoring other-directedness or public self-consciousness scales, and items which exhibited low variability and/or high levels of skewness were also removed. Very few cases had missing values for any of the items, and no item had more than 2 cases missing. These missing values appeared to be randomly distributed across cases and items.

The correlation matrix of the remaining 69 items was examined, and revealed several sizable bivariate correlations (r values above .30). Kaiser's measure of sampling adequacy was found to equal .74, within the recommended range required for a good factor analysis (Kaiser, 1974). These sizable correlations, along with the value of Kaiser's measure, indicated factorability of the matrix.

Following the procedures recommended by Tabachnick and Fidell (1989), the factor analysis of the scale was begun by performing a principal components extraction with varimax rotation (using the SPSS-X statistical package). None of the communality estimates (h^2) equaled or approached a value of 1.00, indicating that neither singularity nor multicollinearity were present among the items. None of the eigenvalues associated with the factors approached 0, a further indication that multicollinearity was not a problem.

Since there were several (24) eigenvalues greater than 1, and the number of variables was greater than 40, it was assumed that Kaiser's (1960) eigenvalue-greater-than-one rule overestimated the number of factors in the set (Cattell, 1966). Accordingly, a scree test was performed by examining the plot of eigenvalues against factors. An obvious point of inflection of this scree plot
was found between the fifth and sixth eigenvalues, indicating the significance of five (or at most six) factors. In order to examine the viability of a five vs. six factor solution, a first extraction was performed including only five factors. An examination of the resultant residual correlation matrix indicated few moderate residuals (between .05 and .10) and few substantial residuals (greater than .10). These findings suggested that the presence of another factor was unlikely. It was therefore decided that a five-factor solution best fit the data. Subsequent interpretations of the items loading on five vs. six factor solutions with various extraction methods confirmed the superiority of the five factor solution in terms of interpretability.

Next, a principal factors extraction was performed, employing varimax rotation\(^3\), and including mean substitution for replacement of missing values. A five factor extraction revealed that these factors accounted for 35.5% of the total variance. Each item's communality value, along with its loadings on the rotated factor matrix, are presented in Table 7. Items in this table are sorted by the absolute magnitude of loadings within each factor, and off-factor loadings less than .30 are replaced with .00, for ease of interpretation. Ten items (subscripted “a” in Table 7) failed to load sufficiently (either above .30, or at a clear break in loading continuities; Stevens, 1986) on any factor, and were therefore excluded from factor interpretations. Further, 12 items (subscripted “b”) displayed complexity, loading above .30 on more than one factor. For factorial simplicity, these items were also eliminated from the interpretation of factors. The remaining 46 items are listed in Appendix N, grouped and sorted by loadings within factors.

**Factor Interpretation:** The first factor contained 17 items and appears to be tapping concern for social appropriateness and acceptance. Items loading highly on this factor include "I get very tense and anxious when I think other people are disapproving of me," and "My behavior often depends on how I feel others wish me to behave." Indeed, 5 of the items loading on this factor were taken
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Note: Off-factor loadings lower in absolute magnitude than .30 are replaced with .00; a = items omitted from subscales due to complexity; b = items omitted from subscales due to factor loadings < .30 or disparate from included loadings.
from the Concern for Appropriateness: Attention to Social Comparison Information subscale (Lennox & Wolfe, 1984). The items seem to possess, as a unifying concept, a tendency to shape one's social behavior in order to "fit in" with the group and thereby avoid anxiety ("I try to pay attention to the reactions of others to my behavior in order to avoid being out of place" and "It is my feeling that if everyone else in a group is behaving in a certain manner, this must be the proper way to behave"). A fitting label for this factor is "Social Appropriateness and Acceptance".

The second factor seems to describe dominance, ego strength, and self esteem. Items loading highly on this factor include "I have a natural talent for influencing people" and "I would be willing to describe myself as a pretty 'strong' personality". Other items seem to be tapping rebelliousness or aggressiveness; "I sometimes create an argument just for fun" and "Sometimes I rather enjoy going against the rules and doing things I'm not supposed to do". This factor, which contains 10 items, will be labelled "Ego Strength".

Factor 3 contains 8 items, the highest loadings belonging to "I think that there's nothing wrong with going along with the crowd" and "I'm pretty flexible in my opinions". Three lower loading items on this factor involve consumer behavior: "I often buy the same type of products that my friends already own", "I often select a product from a store because of advertising I have heard or seen for that product", and "I usually trust a salesperson to give me the best deal for something I'd like to buy". Overall, this factor seems to be tapping agreeableness and amenability, and will be assigned the label "Persuasibility".

The fourth factor, containing 7 items, seems to have as its underlying construct the degree to which individuals' emotions and sensations are influenced by nonpersonal external stimuli. Items loading highly on this factor include "Horror movies sometimes frighten me", "Hearing a favorite song on the radio usually lifts my spirit", and "I sometimes find that I yawn if someone else in the room yawns". Two other items involve cues related to food: "Seeing someone else enjoying good food often makes me want some", and "Sometimes even the sight or smell of food is enough to make me
hungry”. This factor is accordingly given the interpretive label “External Influence”.

The final factor contains four rather homogeneous items, which involve taking other individuals into consideration when determining one’s own behavior. Items loading on this factor include “I always try to consider the other person’s feelings before I do something” and “I consider a matter from every standpoint before I make a decision”. An appropriate label for this factor would be “Consideration of Others”.

The internal consistency of the five factors were assessed using Cronbach’s (1951) coefficient alpha. The coefficients were found to equal .90, .78, .65, .68, and .64 for Factors 1 through 5, respectively. These values indicate satisfactory levels of internal consistency and item homogeneity for first two factors, Social Appropriateness and Ego Strength, but only marginal levels for the remaining three factors, Persuasibility, External Influence, and Consideration of Others. These three factors may be exhibiting lower internal consistency due to the fact that they contain a relatively small number of items; only 8, 7, and 4 items respectively (Kline, 1986).

**Factor Scores and Higher Order Factor Analysis:** These five factors are not, of course, conceptually distinct. Each factor taps the extent to which individuals are aware of, and their behavior influenced by, other individuals or external cues. The Ego Dominance factor reflects the converse: independence and flaunting of social propriety. The original principal factor extraction with oblique rotation of these factors (see Footnote 3) revealed inter-factor correlations ranging from \( r = 0.02 \) to \( r = 0.23 \). Factor scores were computed for each individual by summing the scores on items that loaded on each factor (Comrey, 1973). All items have roughly equal standard deviations to begin with, and all but one factor has more than 6 items. Consequently, for ease of calculation and interpretation, such an approach was deemed appropriate for the present data. Factor scores when calculated in this manner displayed somewhat higher intercorrelations than those computed
using the regression approach for the oblique rotation, ranging from $r = -.02$ (between Ego Strength and External Influence) up to $r = .43$ (between Social Appropriateness and Persuasibility).

A higher order factor analysis (principal factors extraction, oblimin rotation) of the five factor scores (i.e., the five subscales) revealed two higher order factors with eigenvalues greater than one (see Table 8). These two factors together accounted for 59.1% of the variability. Higher order factor 1, which is labelled Social Suggestibility, included the Social Appropriateness, External Influence, and Persuasibility subscales, while higher order factor 2 included only the Ego Strength subscale. These two higher order factors exhibited simple structure; no subscale loaded on more than one higher order factor. Factor 5, Consideration of Others, failed to load above .30 on either higher order factor. These results are an indication that there exists a unifying concept between three of the Social Suggestibility subscales, which together appear to tap the extent to which individuals are agreeable and yielding in social situations, are influenced by factors external to themselves, and shape their behavior so as to be considered socially appropriate and accepted in groups.

Higher order factor 1 (Social Suggestibility) correlated very highly with the Social Appropriateness factor, $r(192) = .93, p < .001$, and less highly but still significantly with Persuasibility, $r(192) = .56$, and External Influence, $r(192) = .61$, while correlating to a lesser degree with Ego Strength, $r(192) = -.19$, and Consideration of Others, $r(192) = .16$. The magnitude of these correlations indicate that higher order factor 1 is influenced in part by the relatively large number of items on factor 1. In order to examine the predictive and discriminant validity of the present scale in terms of the original five factor model and the 2 factor higher order model, subsequent analyses will include examinations of the original 5 factors along with higher order factor 1, Social Suggestibility.
**Table 8**

Factor Loadings and Communalities for Higher Order Factor Analysis of Social Suggestibility Subscales

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Design Ratings Scale

Three measures were calculated from subjects' responses on the 30 item rating task: (a) total difference between the subject's ratings and the "university graduates'" ratings on the 24 critical drawings (distance from graduate); (b) total difference between subjects' and "university dropouts'" ratings on these drawings (distance from dropout); and (c) total difference between subjects' ratings and "consensus" ratings (for the 14 drawings on which the graduates' and dropouts' ratings were within one point of each other: distance from consensus). Accordingly, low scores on these measures indicate the subject's ratings are similar to the presented norms; high difference scores indicate dissimilarity. Further, subjects were asked to report, on a 0 to 6 scale, the extent to which they carefully and thoughtfully considered the attractiveness of each design (consideration of designs), and the degree to which they considered the ratings of the dropouts and/or graduates while making their own ratings (consideration of the others' ratings).

Correlations were computed between subjects' distance-from-dropout, distance-from-graduate, and distance-from-consensus ratings, and their responses to the "consideration of the designs" and "consideration of others' ratings" (see Table 9). Distance-from-consensus scores correlated highly with the other distance scores, not surprisingly, since they are linearly related to them. The "consideration of the designs" ratings were unrelated to any of the three distance scores. "Consideration of others' ratings" scores, on the other hand, correlated significantly in a negative direction with distance-from-graduate and distance-from-consensus ratings, indicating that the extent to which subjects reported that they had given consideration to the ratings of the dropouts and graduates was related to the degree to which their ratings actually resembled the presented false norms.
Table 9

**Correlation Matrix for Design Ratings and Consideration Scores**

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Distance from Dropouts</td>
<td>.03</td>
<td>.53**</td>
<td>.06</td>
<td>-.09</td>
</tr>
<tr>
<td>2 Distance from Graduates</td>
<td>-</td>
<td>.84**</td>
<td>-.05</td>
<td>-.35**</td>
</tr>
<tr>
<td>3 Distance from Consensus</td>
<td>-</td>
<td>.00</td>
<td>-.32**</td>
<td></td>
</tr>
<tr>
<td>4 Consideration of designs</td>
<td>-</td>
<td>-</td>
<td>-.01</td>
<td></td>
</tr>
<tr>
<td>5 Consideration of others</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01
Prediction of Factor Scores

**Personality scales:** Recall that scale measures of compliance, social conformity, exogenic and endogenic orientation were obtained in the present study. As well, an 11-item acquiescence scale was built into the larger social suggestibility scale. In order to determine their predictive value, these measures, along with “distance from consensus” scores and “consideration of others” (i.e., the second opinion item in the influencibility task) scores were included as predictor variables in separate stepwise multiple regressions (MRs) on each of the five suggestibility factors as well as with the higher order factor.

When Factor 1 (Concern for Social Appropriateness) was regressed on the seven predictors, compliance was the first variable entered, accounting for 51% of the variability, a statistically significant amount. Corresponding F, R², and R² change values for these regressions are presented in Table 10. Exogenic orientation was then entered, accounting for an increase in R² of .14. Acquiescence was the third predictor entered, and increased the amount of variance accounted for by 3%, a small but statistically significant amount. No other variables qualified for entry in the prediction of Concern for Social Appropriateness.

The regression of Factor 2 (Ego Strength) on the predictor variables resulted in compliance again being the first variable selected for entry, accounting for 14% of the variability in Factor 2. Acquiescence, exogenic orientation, and endogenic orientation followed in order, adding only 5%, 3%, and 2% to the overall prediction of Factor 2, in each instance, a small but significant gain.

Compliance, acquiescence, and endogenic orientation again each entered into the stepwise regression of Factor 3, Persuasibility. These three predictor variables together accounted for 34% of the variance, almost of that predictability (28%) being due to the compliance variable. No other independent variables were eligible for inclusion.
Table 10

**Stepwise Regressions of Factor Scores**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Independent Var.</th>
<th>R²</th>
<th>R²(ch)</th>
<th>F(ch)</th>
<th>sig. of F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Concern for</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriation</td>
<td>Compliance</td>
<td>.51</td>
<td>.51</td>
<td>191.58</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Exogenic Orient.</td>
<td>.65</td>
<td>.14</td>
<td>77.02</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Acquiescence</td>
<td>.68</td>
<td>.03</td>
<td>19.37</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td><strong>Ego Strength</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compliance</td>
<td>.14</td>
<td>.14</td>
<td>31.49</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Acquiescence</td>
<td>.20</td>
<td>.05</td>
<td>12.35</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Exogenic Orient.</td>
<td>.23</td>
<td>.03</td>
<td>6.93</td>
<td>p&lt;.01</td>
</tr>
<tr>
<td></td>
<td>Endogenic Orient.</td>
<td>.24</td>
<td>.02</td>
<td>4.51</td>
<td>p&lt;.05</td>
</tr>
<tr>
<td><strong>Persuasibility</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compliance</td>
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<td>.28</td>
<td>74.50</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Acquiescence</td>
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<td>.03</td>
<td>9.56</td>
<td>p&lt;.01</td>
</tr>
<tr>
<td></td>
<td>Endogenic Orient.</td>
<td>.34</td>
<td>.02</td>
<td>5.75</td>
<td>p&lt;.05</td>
</tr>
<tr>
<td><strong>External Influence</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compliance</td>
<td>.13</td>
<td>.13</td>
<td>27.77</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td><strong>Consideration of</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>Endogenic Orient.</td>
<td>.03</td>
<td>.03</td>
<td>5.51</td>
<td>p&lt;.05</td>
</tr>
<tr>
<td></td>
<td>Compliance</td>
<td>.09</td>
<td>.06</td>
<td>12.41</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td><strong>Social Suggestibility</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compliance</td>
<td>.56</td>
<td>.56</td>
<td>238.98</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Exogenic Orient.</td>
<td>.64</td>
<td>.08</td>
<td>37.72</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Acquiescence</td>
<td>.67</td>
<td>.03</td>
<td>21.43</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td></td>
<td>Endogenic Orient.</td>
<td>.69</td>
<td>.02</td>
<td>9.38</td>
<td>p&lt;.01</td>
</tr>
</tbody>
</table>

Note: Sig. = Significance of F(ch) value.
Compliance was the sole independent variable contributing significantly to the prediction of Factor 4, External Influence. This lone predictor accounted for 13% of Factor 4's variability.

Finally, when Factor 5 (Consideration of Others) was regressed on the seven predictor variables, endogenic orientation and compliance accounted for small but significant amounts of variability, together predicting only 9% of the factor's variability.

The regression of these same independent variables on the higher order factor, Social Suggestibility, indicated that again, compliance was the best single predictor, accounting for 56% of the variability. Exogenic orientation was entered into the equation next, adding 8% to the prediction. Acquiescence and Endogenic orientation also added significantly, but to a small degree, to the prediction of Social Suggestibility.

Taken together, it is evident that compliance is far and away the best single predictor of the factors that make up the social suggestibility scale. However, for four of the factors, at least one other variable contributed significantly (albeit typically small in magnitude) to the prediction of the factor. Exogenic orientation was useful in the prediction of Social Suggestibility, Concern for Social Appropriateness and Acceptance, and Ego Strength. Acquiescence predicted significant amounts of variance of the above three factors, as well as Persuasibility, even after taking variability attributable to compliance into account. Endogenic orientation was important in the prediction of Consideration of Others, and also added small but significant amounts to the predictions of Ego Strength, Persuasibility, and Social Suggestibility.

**Influencibility task:** As is evident from their lack of entry in the above analyses, the two ratings from the influencibility task fail to predict any of the suggestibility factors when grouped with the personality dimensions. Thus, the results of this analysis indicate that responding on the design ratings task is independent of each of the suggestibility subscales. However, an exploratory inspection of bivariate correlations reveals that Attention to Social Comparison Information, \( r(192) = .26, \ p < .01 \), and Social
Suggestibility, \( r(192) = .25, \ p < .05 \), correlated significantly with consideration of others’ ratings. Thus, subjects’ consideration ratings, but not distance-from-norms ratings, on the designs rating task appear to be at least moderately related to scoring on the social suggestibility subscales.

**Sex and birth order:** A 2 (male/female) by 2 (first & only/later born) MANOVA was conducted on the following dependent measures: the five factor scores, compliance, conformity, acquiescence, exogenic and endogenic orientation, distance from consensus ratings, and consideration of others’ ratings. This analysis yielded only a significant main effect for sex, \( F(11,174) = 1.96, \ p < .05 \). Subsequent univariate F-tests revealed significance of this effect for 3 dependent variables. Males (\( M = 37.24, \ s = 6.09 \)) scored significantly higher than females (\( M = 34.97, \ s = 7.08 \)) on conformity, \( F(1,184) = 4.47 \). Males (\( M = 21.90, \ s = 36.31 \)) also scored higher than females (\( M = 19.87, \ s = 7.08 \)) on Factor 3, Persuasibility. \( F(1,184) = 3.98, \ p < .05 \). On the other hand, males, (\( M = 22.08, \ s = 3.45 \)) scored significantly lower than females (\( M = 23.24, \ s = 3.55 \)) on endogenic orientation, \( F(1,184) = 4.70, \ p < .05 \). Neither the main effect of birth order, nor its interaction with sex, reached significance in this MANOVA.

**Hypnotic responsiveness:** Sixty-nine of the 192 subjects completing Study 2 had been tested for hypnotic responsiveness on the CURSS in a separate session. Because of the high intercorrelations among the dependent variables, bivariate correlations were performed rather than regression analyses. Table 11 shows the correlations between the factors and CURSS Objective, Subjective, and Objective-Involuntariness scores. None of these factor/CURSS correlations reached significance, indicating that hypnotic responsiveness is functionally independent of any of the obtained factors of social suggestibility.

The CURSS also allows for a measure of the number of suggestions that the subject passed objectively, but also rated as occurring mostly voluntarily (O-OI discrepancy scores). These
Table 11

Factors / CURSS Correlation Matrix

<table>
<thead>
<tr>
<th>Factor</th>
<th>CURS</th>
<th>CURSS:S1</th>
<th>CURSS:OI</th>
<th>O-OI Discrep.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Appr.</td>
<td>-.04</td>
<td>.04</td>
<td>.13</td>
<td>-.26</td>
</tr>
<tr>
<td>Ego Strength</td>
<td>-.04</td>
<td>-.10</td>
<td>-.15</td>
<td>.01</td>
</tr>
<tr>
<td>Persuasibility</td>
<td>-.15</td>
<td>.05</td>
<td>.08</td>
<td>-.25</td>
</tr>
<tr>
<td>External Influ.</td>
<td>.01</td>
<td>.06</td>
<td>.18</td>
<td>.14</td>
</tr>
<tr>
<td>Consid. Others</td>
<td>.01</td>
<td>-.15</td>
<td>-.13</td>
<td>.29*</td>
</tr>
<tr>
<td>Social Sugg.</td>
<td>-.07</td>
<td>.06</td>
<td>.16</td>
<td>-.29*</td>
</tr>
</tbody>
</table>

n  69  69  69  40

Note: Correlations involving the O-OI Discrepancy scores involve only those 40 subjects who obtained CURSS:O scores above 2. * p < .05
scores may be seen as a measure of the extent to which subjects comply overtly to the suggestions without experiencing the called-for subjective experience. Because subjects who pass few of the suggestions according to the objective scale are not able to have moderate to high discrepancy scores, subjects scoring below 3 on the CURSS:O were excluded from this analysis. Table 11 also shows the correlations between the factor scores and this CURSS discrepancy score. As can be seen, this discrepancy score correlated significantly with Consideration of Others, r(40) = .29, p < .05, as well as the higher order factor, Social Suggestibility, r(40) = -.29, p < .05. These results indicate that subjects who consider other individuals' reactions and expectations before acting tended to "comply" overtly to the hypnotic suggestions, without reporting the corresponding subjective experience called for. Further, subjects scoring high on Social Suggestibility tended to have low discrepancy scores. This result is open to at least two interpretations. On the one hand, it may mean that "suggestible" individuals are relatively unlikely to simply overtly comply in response to hypnotic suggestions. Instead, these subjects tend to make the overt movement only when they actually experience the suggested effects subjectively. On the other hand, these findings may instead indicate that "suggestible" individuals tend to report experiencing the subjective effects to each suggestion they passed overtly, even in the absence of the corresponding subjective experiences.

Intersession correlations: Thirty-nine subjects completed both Study 1 and Study 2. These subjects were blind as to any connection between the sessions. This afforded the opportunity to examine relationships among variables collected in these two sessions. Because of the low number of cases involved, multiple regression analyses were not performed. A matrix of bivariate correlations is presented in Table 12, and is treated as exploratory in nature. All factors correlated moderately with attention to social comparison information: recall that 6 items from this scale were included in Factor 1, and so a high correlation in this case is artificial. Factor 1 (Concern for Social Appropriateness and
Table 12

Factor Scores / Personality & GSS Measures Correlation Matrix

<table>
<thead>
<tr>
<th></th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
<th>F4</th>
<th>F5</th>
<th>H.O.Fl</th>
<th>Social</th>
<th>Ego</th>
<th>Persua-</th>
<th>Extnl</th>
<th>Consid</th>
<th>Sugg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Approp</td>
<td>.01</td>
<td>.21</td>
<td>-.12</td>
<td>.13</td>
<td>.21</td>
<td>.00</td>
<td>.44*</td>
<td>-.30*</td>
<td>.20</td>
<td>.00</td>
<td>.33</td>
<td>.35*</td>
</tr>
<tr>
<td>Ego Strength</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.44*</td>
<td>-.42*</td>
<td>-.15</td>
<td>.11</td>
<td>-.02</td>
<td>.27*</td>
</tr>
<tr>
<td>Persuasion Sibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.38*</td>
<td>-.07</td>
<td>.20</td>
<td>.01</td>
<td>.35*</td>
<td></td>
</tr>
<tr>
<td>Extnl Influ Others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>S.M. Acting</td>
<td>-.24</td>
<td>-.26</td>
<td>-.26</td>
<td>-.32*</td>
<td>-.27*</td>
</tr>
<tr>
<td>Consid Sugg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>S.M. Extraversion</td>
<td>-.37*</td>
<td>.43*</td>
<td>-.02</td>
<td>-.16</td>
<td>-.18</td>
</tr>
<tr>
<td>H.O.Fl Social</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cross Sit. Var.</td>
<td>.49*</td>
<td>.06</td>
<td>.14</td>
<td>.00</td>
<td>-.13</td>
</tr>
<tr>
<td>GSS Measures</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Att. Soc. Comp. Inf.</td>
<td>.66**</td>
<td>-.38*</td>
<td>.53**</td>
<td>.35*</td>
<td>.29*</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>.43*</td>
<td>-.24</td>
<td>.07</td>
<td>.03</td>
<td>.06</td>
<td>.31*</td>
<td>EPI Extraversion</td>
<td>-.27</td>
<td>.46*</td>
<td>.13</td>
<td>.02</td>
<td>-.37*</td>
</tr>
<tr>
<td>Lie</td>
<td>-.36*</td>
<td>.10</td>
<td>-.27</td>
<td>-.24</td>
<td>-.06</td>
<td>-.39*</td>
<td>EPI Lie</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Self Esteem</td>
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<td>.30*</td>
<td>-.20</td>
<td>-.02</td>
<td>-.15</td>
<td>-.28*</td>
<td>Yield 1</td>
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<td>.06</td>
<td>.12</td>
<td>-.02</td>
</tr>
<tr>
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<td>.10</td>
<td>.04</td>
<td>.17</td>
<td>-.12</td>
<td>Shift</td>
<td>-.12</td>
<td>.10</td>
<td>.18</td>
<td>.04</td>
<td>-.12</td>
</tr>
<tr>
<td>Intrusions</td>
<td>-.24</td>
<td>.06</td>
<td>-.16</td>
<td>.10</td>
<td>-.02</td>
<td>-.18</td>
<td>Intrusions</td>
<td>-.24</td>
<td>.15</td>
<td>.15</td>
<td>.10</td>
<td>-.08</td>
</tr>
<tr>
<td>Total Suggest</td>
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<td>.15</td>
<td>.15</td>
<td>.10</td>
<td>-.08</td>
<td>-.08</td>
<td>Narr. Conf.1</td>
<td>.02</td>
<td>.16</td>
<td>-.30*</td>
<td>-.10</td>
<td>.10</td>
</tr>
<tr>
<td>Narr. Conf. 2</td>
<td>-.16</td>
<td>.22</td>
<td>-.38*</td>
<td>-.13</td>
<td>.12</td>
<td>-.26</td>
<td>Quest. Conf. 1</td>
<td>-.30*</td>
<td>.28*</td>
<td>-.25</td>
<td>-.10</td>
<td>.14</td>
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<tr>
<td>Quest. Conf. 1</td>
<td>-.36*</td>
<td>.34*</td>
<td>-.29*</td>
<td>-.09</td>
<td>.12</td>
<td>-.36*</td>
<td>Quest. Conf. 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: * p < .05; ** p < .01
Acceptance) and the higher order factor, Social Suggestibility, were correlated moderately with social anxiety, public self-consciousness, other-directedness, cross-situational variability, and the EPI neuroticism scale, and negatively with extraversion (from the self-monitoring scale), self esteem, and the EPI Lie scale. Factor 2 (Ego Strength) correlated positively with self-esteem and both measures of extraversion, and negatively with social anxiety, and public self-consciousness. Factor 5 (Consideration of Others) was moderately correlated with public self-consciousness, and negatively with acting and extraversion from the EPI. Factors 3 and 4 (Persuasibility and External Influence) failed to correlate to a moderate degree with any of the other Study 1 personality measures.

GSS scores were also available for these 39 subjects; the only significant correlation between GSS measures and factor scores was a negative correlation between Factor 1 (Concern for Social Appropriateness) and Yield 1. The higher order factor, Social Suggestibility, failed to correlate significantly with any of these GSS measures. Several moderate correlations did arise, however, between factors scores and confidence measures from the GSS. Social Appropriateness and Social Suggestibility correlated negatively with both question confidence measures, whereas Ego Strength correlated positively with these measures. Persuasibility correlated negatively with both measures of recall confidence, and with question confidence on the second interrogation. These findings indicate that a) confidence during questioning is related to ego strength; b) need for social appropriateness and acceptance is negatively related to confidence during questioning; and c) persuasibility and social suggestibility are negatively related to confidence in recall abilities. In summary, the results of this correlational analysis indicate that those individuals with a high need for social appropriateness and approval yielded relatively infrequently during questioning, and like those with high persuasibility and social suggestibility scores, displayed low confidence during interrogation. Subjects high in ego strength, on the other hand, displayed high levels of confidence during the GSS.
Discussion

Social Suggestibility Scale: An exploratory factor analysis of the items from the social suggestibility scale suggested the presence of five factors. The first factor contained 17 items, and was labelled Concern for Social Appropriateness and Acceptance. This factor taps the degree to which individuals use cues and reactions from others in order to assess “proper” social behavior. Fitting in with the crowd appears to be seen as appropriate behavior for individuals scoring high on this dimension. These individuals report that they try to avoid being out of place and to avoid social disapproval.

The second factor, Ego Strength, involves social dominance and power, extraversion, and social aggressiveness. Individuals scoring high on this factor tend to describe themselves as being “strong-willed” and argumentative.

The third social suggestibility dimension, Persuasibility, appears to be measuring in part flexibility, amenability, docility and co-operativeness. “Persuasible” individuals tend to think that there’s nothing wrong with going along with the crowd, don’t mind taking orders or adapting their opinions and behaviors in order to please others, and are influenced in their consumer behavior by friends, salespeople, and advertisements.

Factor 4, External Influence, involves the degree to which individuals’ emotions and affect are influenced by outside factors as opposed to being influenced by other individuals or social appropriateness (which is measured by Factor 1). High scorers on this dimension are affected by music, sad and/or frightening movies, and the sight or smell of food. They also report having fallen for stories that they later found to be untrue.

The final factor, Consideration of Others, appears to tap the extent to which individuals consider other people’s feelings, desires, and opinions, before acting or making decisions. This factor may be tapping deference and dependence.

The dimensions assessed by the Social Suggestibility Scale seem to tap separate but related constructs of social influence: persuasibility, concern for social appropriateness and others’
feelings, and influencibility. Ego strength can be thought of as the reverse of social interactiveness (Strong, 1991), in that it assesses the degree to which individuals behave according to their own desires and goals, arguing rather than cooperating, and spurning "accepted" or "appropriate" social behavior.

A higher order factor analysis of the original five factors revealed the presence of two predominate higher-order factors. The first encompasses Factors 1, 3, & 4, namely concern for social appropriateness, persuasibility, and external influence. This higher order factor appears to tap the extent to which individuals are agreeable and yielding in, and influenced by, social situations, and the degree to which they shape their behavior in order to avoid anxiety, please others, and appear socially appropriate. In other words, this higher order factor, labelled Social Suggestibility, involves the degree to which subjects' behavior is governed not by themselves, but rather influenced by other individuals and situations. Ego strength formed a second higher order factor on its own, while Consideration of others failed to load on either factor, perhaps due to the low internal consistency and the few number of items (four) from the original scale loading on this factor.

Prediction of Factors: Social Suggestibility and ego strength were related to a measure of compliance (Gudjonsson, 1989a), which in turn shares a moderate amount of variability with social conformity (Gudjonsson, 1989c; Pettigrew, 1958a). An embedded scale of acquiescence also predicted a significant proportion of all the factors except External Influence. This latter lack of relationship is not surprising, since the External Influence factor seems to be tapping the degree to which individuals are affected by nonpersonal influences, whereas acquiescence involves the tendency to agree with and defer to other individuals.

Further construct and discriminant validation for the subscales is suggested by their relationships with other personality questionnaire scores. Social Suggestibility and Concern for Social Appropriateness, described as involving the adaptation of one's behaviors based on the actions and evaluations of others, were found
to be related to exogenous orientation, public self-consciousness, social anxiety, other directedness, extraversion, and attention to social comparison information (i.e., external factors), but unrelated to private self-consciousness and endogenic orientation (i.e., internal forces). The relationship between social suggestibility and exogenic orientation confirms earlier findings (Barnes et al., 1988; Hogan & Cheek, 1983; Lamphere & Leary, 1990) that people whose identities are based strongly on social attributes and weakly on personal attributes are less resistant to persuasion and more concerned with other people's impressions of them.

Ego Strength was associated with high scores on extraversion and self esteem, and low scores on public self consciousness, social anxiety, and attention to social comparison information. It was found to be independent of other directedness and cross-situational variability, indicating that individuals high in ego strength behave as they wish across situations, with relatively little regard for the behaviors of others.

Persuasibility, described as the tendency to go along with the crowd and do as others do, was found to be related to attention to social comparison information and low scores on endogenic orientation, while being unrelated to levels of extraversion, neuroticism, and private self-consciousness. These findings confirm that differences in susceptibility to peer pressure can be assessed with measures such as Lennox and Wolfe's Concern for Appropriateness scale, of which attention to social comparison information is a subscale (Johnson, 1989; Lennox & Wolfe, 1984; Snyder, 1974). This also concurs with the earlier-noted findings with regards to personal versus socially based identities (Barnes et al., 1988; Hogan & Cheek, 1983; Lamphere & Leary, 1990), in that persuasible individuals pay a relatively great amount of attention to external factors (particularly the behaviors and perceived wishes of others), and lesser attention to their own inner thoughts, feelings, and motivations.

External influence was hypothesized to tap the degree to which individuals are effected by non-human factors, such as songs and food. Correspondingly, this subscale was found to be generally
unrelated to measures of acquiescence, endogenous orientation, and other measures of personality associated with responses to social influence. The only significant correlate of external orientation was attention to social comparison information, which included items such as “I actively avoid wearing clothes that are not in style”, “I tend to pay attention to what others are wearing”, and “I usually try to keep up with clothing style changes by watching what others wear”. These items tap individuals’ awareness of others’ styles and manner of dress (i.e., nonpersonal factors) more so than personal factors such as others’ behaviors or feelings.

Finally, Consideration of Others correlated positively with public self-consciousness (e.g., “I’m concerned about what other people think of me”, and “I usually worry about making a good impression”), and negatively with acting (“I guess I put on a show to impress or entertain people” and “I would not change my opinions, or the way I do things, in order to please someone or win their favor”) and extraversion (“Do you hate being with a crowd who always play jokes on one another?” and “Do you like playing pranks on others?”). Indications that this subscale is indeed tapping the degree to which individuals take other people’s feelings into consideration.

Sex and Birth Order Differences: Males scored significantly higher than females on measures of social conformity and persuasibility (Factor 3). This finding was unexpected. The majority of research in the area of conformity and persuasibility have found females to be more conforming than males (e.g., Janis & Field, 1959; Nord, 1969; Santee & Jackson, 1982). However, these studies assessed behavioral measures of conformity (autokinetic effect, synonym matching tasks, reciprocity appeals, and susceptibility to influence from persuasive communications), and the methodologies employed in these studies have been described as heavily biased in favor of finding higher female conformity (see Eagly & Carli, 1981; Sistrunk and McDavid, 1971 for reviews). In contrast, the measure of conformity used in the present study could be described as a pencil and paper scale of conformity to societal cohesiveness (Pettigrew,
1958a). No previous study has investigated sex differences on this measure (Gudjonsson, 1989a; Pettigrew, 1958a).

The present findings seem to correspond with the notion that males comply with rules more than do women (Eagly, 1978; 1983; Trenholm, 1989), since the items on the social conformity scale do reflect "societal rules". Eagly (1978, 1983) and Trenholm (1989) also argue that women, being more sociable than males, comply with models more so than rules. Further investigation is needed to confirm this tendency for males to outscore females on measures of social conformity, and to investigate the possibility that women may be more easily persuaded or influenced than males by models.

Given the findings of Maccoby & Jacklin (1974), who reported no sex differences on various measures of suggestibility, the finding of higher persuasibility scores for males than for females is also surprising. Examination of the items on the persuasibility subscale does not reveal any items that appear to be biased towards higher male responding, in fact, some appear to tap constructs on which males would typically be expected to score lower than females (e.g., "I'm pretty flexible in my opinions", and "I do not mind taking orders and being told what to do"). As Zimbardo & Lieppe (1991, pp. 63-64) opine, "(men)...are more likely to see dissent as a way to express their competence...Women, in contrast, tend to see cooperation and agreement with others in their group as reflecting competence". Relatedly, Eagly & Wood (1991) stated that "Women are expected to possess high levels of communal attributes, including being friendly, unselfish, and concerned with others, and to be emotionally expressive. Men are expected to possess high levels of agentic qualities, including being independent, masterful, assertive, and instrumentally competent" (p. 309). This basically reflects the social-role approach to sex differences. The results of the present study clearly fail to support these views with respect to persuasibility. Again, further testing with this new persuasibility subscale is needed to clarify possible sex differences.

Males in the present study scored significantly lower than females on endogenic orientation. Although sex differences on this variable have not been investigated in previous studies, this finding
may reflect a tendency for females to be more reflective and introspective than males (Buss, 1980; Snyder, 1987).

A good deal of early research has found first-born individuals to be more yielding, dependent, conforming, susceptible to social pressure, and responsive to suggestion than later-borns (Arrowood & Amoroso, 1964; Dittes, 1961; Schacter, 1959, 1964; Sears, 1950; Staples & Walters, 1961), while other researchers have found that birth order interacted with gender in determining influencibility (Sampson, 1962; Warren, 1966). Based on findings such as these, Weiss (1966) hypothesized that first-born and only children display greater sensitivity to affiliative cues and higher levels of social influencibility. The results of the present study indicate no effects of birth order, either alone or in conjunction with sex, on any of the measures of social influencibility or conformity. This finding seems to agree with the apparent failure to find (or to look for) birth order differences in more recent personality studies (Trenholm, 1989).

**Influencibility Task:** The influencibility (designs rating) task used in the present study involved subjects rating the attractiveness of a series of geometric designs, for which supposed “norms” of ratings by students who went on to graduate from university or who dropped out before graduating, are presented. The similarity of the subjects’ ratings to those of the graduates or dropouts, or to a consensus rating (where graduates’ and dropouts ratings’ were similar), were taken as a measure of the extent to which subjects’ subjective ratings were influenced by the presented false norms. After completing the task subjects were asked if they considered the presented norms when making their own ratings. Subjects who reported that they had given the norms a high degree of consideration gave ratings similar to consensus and graduates’ ratings. Overall, subject ratings more closely reflected those of the graduates, a more envied group for first year university students, than those of the dropouts.

The extent to which subjects were influenced by the reported norms was related to their “consideration of the others’ ratings” scores as well as to their scores on one of the social suggestibility
subscales (Consideration of Others) and to their responses to the Attention to Social Comparison Information subscale of the Concern for Appropriateness scale. Thus, subjects whose ratings reflected the graduates' and consensus ratings also reported (on separate scales and/or in separate sessions) that they consider other people's opinions and behavior prior to acting, and look to the behavior of other people to determine appropriate behavior when uncertain how to act in a social situation. Thus, the present study provides evidence that influencibility (as measured by the designs rating task) may be at least moderately predicted by responses to pencil and paper scales assessing social comparisons and consideration of other individuals' behaviors and opinions.

Ratings on the designs rating task were not related to any of the other social suggestibility subscales, including persuasibility or concern for social appropriateness. This finding concurs with those of Moore (1964), who reported independence between measures of influencibility (from Schachter, 1959) and persuasibility (from Hovland & Janis, 1959). However, subjects' responses to the question “To what extent did you consider the ratings of the dropouts and/or graduates while making your own ratings?” was related to Social Suggestibility and Concern for Social Appropriateness. In other words, these two factors predicted the extent to which subjects reported using the false norms as guidelines, but not whether or not their ratings were actually related to these norms. This indicates that a pencil and paper task, such as the social suggestibility scale, may be a better predictor of reported behavior than of actual behavior.

Hypnotizability and Social Suggestibility: Hypnotizability is conceptualized by many researchers (e.g., Evans, 1967; Eysenck & Furneaux, 1945; Moore, 1964) as being related to the classic concept of “primary” suggestibility. On this basis, it was hypothesized that hypnotic responsiveness would be independent of social suggestibility, since social suggestibility usually involves more indirect suggestions and is thought by some researchers as being more similar to “secondary” (Eysenck & Furneaux, 1945; Moore,
1964) or prestige suggestibility (Evans, 1967). In contrast, other researchers have reported significant relationships between levels of hypnotizability and conformity to a majority group opinion (Shames, 1981), and the tendency to report (following suggestive inferences) that a light of constant intensity had actually increased in brightness (Hajek & Spacek, 1981). The results of the present investigation found no relationship between hypnotic responsiveness as indexed by objective, subjective, or involuntariness scores on the CURSS, and any of the five subscales, nor the higher order factor, of the social suggestibility scale. Further, CURSS hypnotizability scores were not predicted by any of the other social influence scales included in the present study (acquiescence, conformity, compliance, exogenic, or endogenic orientation). Thus, it appears that hypnotic responsiveness is a suggestibility measure independent of any of these social suggestibility scales. These findings are consistent with many previous failures to find personality correlates of hypnotizability, including failures of hypnotizability to correlate with the CPI and the Meyers-Briggs Inventory (Barber, 1964; HilgarJ, 1965), locus of control (Diamond, Gregory, Lenney, Steadman, & Talone, 1974), and social desirability (Derman & London, 1965). Any positive results that have been reported have been small in magnitude, and usually nonreplicable (see de Groh, 1989 for a review).

A different pattern of results emerges when one examines not hypnotizability scores per se, but rather a measure of compliance during hypnotic responsiveness testing. The O-OI discrepancy score from the CURSS measures the extent to which individuals "comply" with the social demands of the hypnotic testing session by enacting the overt physical behavior called for by the suggestion without the accompanying subjective experience of that action as being involuntary. In other words, the suggestion is "passed" objectively, but not subjectively. This discrepancy score was correlated in a positive direction with Factor 5 (Consideration of Others) and in a negative direction with Social Suggestibility. Subjects from the present study who reported considering the actions and expectations of others before acting also tend to comply behaviorally to the
hypnotic suggestions. Subjects scoring high in social suggestibility tended to have low behavioral-subjective discrepancy scores; that is, they reported having subjectively experienced the suggested effects whenever they manifested the overt behavior. Whether this is an indication that "socially suggestible" subjects actually do have matching objective and subjective experiences versus display a reporting bias on the subjective dimension remains to be empirically validated. These findings, however, await replication with a larger sample (than n = 40) before any firm conclusions or interpretations can be proffered, however.

Interrogative Suggestibility and Social Suggestibility: Thirty-nine subjects completed both the social suggestibility scale and Gudjonsson's Interrogative Suggestibility Scale. Although factor 1 (social appropriateness) tended to correlate significantly (in a negative direction) with the GSS measures of Yield, total suggestibility, and intrusions, no other factor, including overall Social Suggestibility, was found to be predictive of any of the interrogative suggestibility measures.

The social appropriateness, ego strength, and persuasibility factors were, however, predictive of GSS confidence scores. These findings indicate that individuals with a high need for approval yielded infrequently during questioning, and like those with high persuasibility scores or low ego strength scores, displayed low levels of confidence during interrogation. Thus, confidence after negative feedback in an interrogation context is related to persuasibility and lack of ego strength, and appears to be more affected and predicted by individual personality characteristics than is interrogative suggestibility.

Although social suggestibility may be useful in predicting subjects' confidence ratings during interrogative suggestibility testing, these findings tend to provide empirical support to the contention that interrogative suggestibility itself is independent of other forms of suggestibility (Gudjonsson, 1986, 1987a, 1990b; Gudjonsson & Clark, 1986).
General Discussion

It has been said that "it is easily assumed that because we have a single word [suggestibility] to cover a variety of experiences of different types there must therefore be some unity among these, but this is not so" (Eysenck, 1969, p. 58). The validity of construing suggestibility as a trait consistent across different situations has been debated since the first empirical investigations into the construct (e.g., Aveling & Hargreaves, 1921; Binet, 1900; Eysenck & Furneaux, 1945). Although the most consistent findings in the area point to moderate relationships among direct measures of sensory suggestibility, labelled "primary suggestibility" (Eysenck & Furneaux, 1945; Evans, 1967; Gheorghiu, 1989), and a general lack of relationship between sensory and "secondary" or indirect suggestibility, the findings with respect to the relationships among measures of persuasibility, influencibility, conformity, and other forms of social influence remains a topic of debate (Evans, 1967; Moore, 1964; Stukat, 1958). The emergence of a relatively new measure of suggestibility, interrogative suggestibility (Gudjonsson, 1984a, 1987a, Gudjonsson & Clark, 1986), invites hypotheses concerning its relationships with other behavioral measures (e.g., hypnotic responsiveness, influencibility) as well as personality measures.

The findings of the present investigations provide little indication that the various measures of social influence are interrelated, nor that they are related to responsiveness in a hypnotic context. The dimensions assessed by tests of interrogative suggestibility (as measured by the Gudjonsson Suggestibility Scale), hypnotic responsiveness (as assessed by the Carleton University Responsiveness to Suggestion Scale) and influencibility (as measured by a false-norm design rating task) failed to correlate significantly with one another. These findings contradict conceptions of suggestibility as a unitary concept (Abraham, 1962; Otis, 1924; Sidis, 1928; Stukat, 1958) and of a general factor underlying suggestibility in hypnotic and nonhypnotic situations (Council & Loge, 1988; Graham & Green, 1981; Miller, 1980; Shames,
1981; Wallace, Garrett, & Anstadt, 1974). Support for an underlying factor in these latter studies may have resulted from a contextual artifact in the testing sessions. In these studies, hypnotizability tests were often administered in the same context, and sometimes in the same session, as measures of suggestibility. Correlations between these variables may have been inflated by expectancy carryover effects provided by assessing the various measures in the same context. Care was taken in the present studies to divorce the hypnotizability, interrogative suggestibility, and influencibility testing situations. This separation may account for the nonsignificant relationships obtained in this study between different suggestibility measures. Further research which systematically varies the contexts in which different measures of suggestibility are assessed is needed to clarify the role of testing context in the relationship between these measures of suggestibility.

Behaviors in any given situation tend to be determined by contextual variables, and behaviors in different situations are often mediated by different contextual variables. For example, hypnotizability has been found to be determined in part by response expectancies and role expectancies (Barber, 1969; Kirsch, 1985; Sarbin, 1950; Spanos, 1982), while interrogative suggestibility has been shown to be influenced by the perceived authoritativeness of the investigator, state anxiety, instructional manipulations, and negative feedback (Gudjonsson, 1988a, 1989a; Gudjonsson & Clark, 1986; Gudjonsson & Hilton, 1989; Gudjonsson & Lister, 1984; Hansdottir et al., 1990). General trait factors, therefore, do not do a good job of explaining these different behaviors mediated by different contextual variables in different situations.

The present study’s findings of independence between behavioral measures thought to tap suggestibility and pencil and paper measures of personality reflect the concept of situationism (Mischel, 1968; Mischel & Peake, 1982; c.f. Block, 1977; Epstein, 1980)4. This concept reflects the idea that situational variables outweigh consistent personality variables in determining individual behavior. To cite Mischel’s (1968) favorite example, a series of
studies (Hartshorne & May, 1928; Hartshorne, May, & Shuttleworth, 1930) investigated consistencies in moral conduct. School children were placed in various situations in which they were given a chance to lie, cheat, or steal. Correlations among pencil and paper measures of moral conduct were consistently high. However, these correlations dropped when the questionnaires were completed in different settings. Although in each instance the questionnaires measured basically the same construct, as the settings grew more different, the correlations became lower and lower. “The fact that individuals were not highly consistent over the different situations seemed to indicate not that the situations were not measuring honesty or dishonesty, but that the children were not consistently honest. A person may cheat in situation X but not in situation Y, and vice versa for another person” (Wagstaff, 1981, p. 134). As in the Hartshorne et al. studies, testing method variance in the present investigations may have resulted in a lack of relationship between the various measures of suggestibility, i.e., the assessment situations may have been stronger determinants of behavior than subjects’ consistent personality “traits”. Thus, the present findings are consistent with the conclusions of Allport (1937), Linton (1963) and Murphy, Murphy, and Newcomb (1937) that “suggestibility is rarely a consistent trait, but is rather a function of the specific situation” (Linton, 1963, p. 543).

Along with being independent of one another, the tests of suggestibility assessed in this study were generally independent of the personality measures designed to assess response to social influence (e.g., self monitoring, concern for social appropriateness, social suggestibility). Self descriptions, as indexed by the pencil and paper questionnaires, quite often did a good job of predicting other questionnaires, but generally were not good predictors of actual behaviors on social influence tasks. For example, social suggestibility as measured by a new scale to correlated moderately with exogenic orientation, acquiescence, and public self consciousness, and strongly with attention to social comparison information, conformity, and compliance (all self-report scales); however, these questionnaires all failed to correlate even
moderately with behavioral measures of suggestibility such as hypnotizability, influencibility, and interrogative suggestibility. Interestingly, several questionnaire variables (e.g., social suggestibility, ego strength, and self esteem) predicted reported confidence during interrogation without predicting actual yielding or shifting during questioning. Further, other scales (the social suggestibility and Consideration of Others scales, as well as attention to social comparison information) correlated with the extent to which subjects reported having considered presented false norms when making their own judgements of the attractiveness of a series of designs on an influencibility task, but did not correlate significantly with the degree to which the subjects' ratings actually resembled the false norms.

Hypnotizability was unrelated to the other behavioral measures of suggestibility and to the various personality scales employed in the present study. The finding that hypnotic responsiveness was unrelated to subjects' responses in the interrogative suggestibility test has important forensic implications. This result contradicts the contentions of Spiegel (1987) and Orne (1979; Orne et al., 1984) that high hypnotizables are particularly susceptible to the effects of leading questions. Accordingly, the fear that highly hypnotizable subjects are particularly likely to be strongly influenced by interrogation and cross-examination procedures in the courtroom is a concern still lacking empirical evidence.

Gudjonsson's (1987a, 1989c) contention that interrogative suggestibility is relatively independent of other forms of suggestibility was substantiated by the findings of the present studies. GSS scores were unrelated to hypnotic responsiveness and influencibility scores. In fact, the GSS yield and shift scores were generally not predicted to any substantial degree by any of the questionnaire or demographic variables. The sole exceptions were trends towards negative correlations between each of the yield, total suggestibility, and intrusion scores with one of the social suggestibility scale factors, Concern for Social Appropriateness and Approval. Subjects scoring high on this dimension tended to be
relatively less suggestible on the GSS. The inclusion of a measure of intrusions when testing subjects on the GSS is recommended as a further assessment of the degree to which an individual's recall is influenced by leading questions, as it taps the extent to which subjects are liable to incorporate incorrect post-event information into subsequent testimony.

In summation, the results of the present study indicate that measures of suggestibility such as hypnotic responsiveness, interrogative suggestibility, influencibility, and social suggestibility are generally independent of each other. Self-report scales did predict responses to other self-report scales, but generally did not predict behavioral responses on these tasks.
1 Total suggestibility on the GSS was not included in this factor analysis in order to avoid a singular matrix, as Total suggestibility is simply the sum of Yield 1 and Shift scores.

2 Initially, an oblique rotation was performed on this factor analysis, as there was reason to believe that the underlying processes for these variables may not be independent. However, an examination of the produced four-solution factor correlation matrix indicated relatively low correlations (r's < .17) among the factors. Thus, for ease of interpretation, results of the simpler varimax rotation are presented (Tabachnick & Fidell, 1989, p. 630). All variables loaded on their respective factors independent of the rotation procedure utilized.

3 In order to determine the stability of the principal factors extraction, principal components and unweighted least squares extractions were also performed on the data. All three extraction techniques were performed with both oblique (oblimin) and orthogonal (varimax) rotations. The results of all nine extraction/rotation combinations revealed very similar patterns of variable loadings on their respective factors, with item-inclusion decisions almost equivalent independent of the factor analytic technique utilized. As in the factor analysis in study 1 (see Footnote 1), the results of the simpler varimax solution are presented for ease of interpretation.

4 The concept of situationism as a determinant of behavior (Mischel, 1968; Mischel & Peake, 1982) is not, of course, without its detractors. Several investigators (e.g., Endler & Magnusson, 1976; Pervin, 1985) have conceptualized the role of personality traits on behavior in terms of interactionism, the idea that situations and personality interact to determine behavior.
References


Appendix A

GSS Narrative Story

Anna Wilkinson of North Vancouver was on holiday in Spain when she was held up outside her hotel and robbed of her handbag, which contained $50 worth of travellers' cheques and her passport. She screamed for help and attempted to put up a fight by kicking one of the assailants in the shins. A police car arrived shortly, and the woman was taken to the nearest police station, where she was interviewed by Detective Sergeant Delgado. The woman reported that she had been attacked by three men, one of whom she described as oriental-looking. The men were said to be slim and in their early twenties. The police officer was touched by the woman's story and advised her to contact the Canadian Embassy. Six days later, the police recovered the lady's purse, but the contents were never found. Three men were subsequently charged, two of whom were convicted and given prison sentences. Only one had had previous convictions for similar offences. The lady returned to Canada with her husband Simon, and two friends, but remained frightened of being out on her own.

Note: The narrative story has been parsed into its 40 constituent details.
Appendix B

GSS Questions

1. Did the woman have a husband named Simon?
2. Did the woman have one or two children?
3. Did the woman’s glasses break during the struggle?
4. Was the woman’s name Anna Wilkinson?
5. Was the woman interviewed by a detective sergeant?
6. Were the assailants black or white?
7. Was the woman taken to the central police station?
8. Did the woman’s purse get damaged in the struggle?
9. Was the woman on holiday in Spain?
10. Were the assailants convicted six weeks after their arrest?
11. Did the woman’s husband support her during the police interview?
12. Did the woman hit one of the assailants with her fist or her purse?
13. Was the woman from North Vancouver?
14. Did one of the assailants shout at the woman?
15. Were the assailants tall or short?
16. Did the woman’s screams frighten the assailants?
17. Was the police officer’s name Delgado?
18. Did the police give the woman a lift back to her hotel?
19. Were the assailants armed with knives or guns?
20. Did the woman’s clothes get torn in the struggle?
Appendix C

Public and Private Self-Consciousness Scale

INSTRUCTIONS: Please indicate the extent to which each of the following statements is characteristic of you, by circling a number from 0 to 4 for each statement, where:

0 = EXTREMELY UNCHARACTERISTIC
and 4 = EXTREMELY CHARACTERISTIC

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<tr>
<td>1. I'm always trying to figure myself out.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>2. I'm concerned about my style of doing things.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>3. Generally, I'm not very aware of myself.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>4. It takes me time to overcome my shyness in new situations.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5. I reflect about myself a lot.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>6. I'm concerned about the way I present myself.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>7. I'm often the subject of my own fantasies.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>8. I have trouble working when someone is watching me.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>9. I never scrutinize myself.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10. I get embarrassed very easily.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>11. I'm self-conscious about the way I look.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12. I don't find it hard to talk to strangers.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13. I'm generally attentive to my inner feelings.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
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14. I usually worry about making a good impression.

15. I’m constantly examining my motives.

16. I feel anxious when I speak in front of a group.

17. One of the last things I do before I leave my house is look in the mirror.

18. I sometimes have the feeling that I’m off somewhere watching myself.

19. I’m concerned about what other people think of me.

20. I’m alert to changes in my mood.

21. I’m usually aware of my appearance.

22. I’m aware of the way my mind works when I work through a problem.

23. Large groups make me nervous.
Appendix D

Concern for Appropriateness Scale

INSTRUCTIONS: RATE EACH QUESTION ACCORDING TO THE EXTENT TO WHICH IT APPLIES TO YOU USING A SCALE FROM 0 TO 5; 0 BEING “NOT AT ALL” AND 5 BEING “EXTREMELY”.

1) 0 1 2 3 4 5 I tend to show different sides of myself to different people.

2) 0 1 2 3 4 5 It is my feeling that if everyone else in a group is behaving in a certain manner, this must be the appropriate way to behave.

3) 0 1 2 3 4 5 I actively avoid wearing clothes that are not in style.

4) 0 1 2 3 4 5 In different situations and with different people, I often act like very different persons.

5) 0 1 2 3 4 5 At parties I usually try to behave in a manner that makes me fit in.

6) 0 1 2 3 4 5 When I am uncertain how to act in a social situation, I look to the behavior of others for cues.

7) 0 1 2 3 4 5 Although I know myself, I find that others do not know me.

8) 0 1 2 3 4 5 I try to pay attention to the reactions of others to my behavior in order to avoid being out of place.

9) 0 1 2 3 4 5 I find that I tend to pick up on expressions from others and use them as part of my own vocabulary.

10) 0 1 2 3 4 5 Different situations can make me behave like very different people.
11) 0 1 2 3 4 5 I tend to pay attention to what others are wearing.

12) 0 1 2 3 4 5 The slightest look of disapproval in the eyes of person with whom I am interacting is enough to make me change my approach.

13) 0 1 2 3 4 5 Different people tend to have different impressions about the type of person I am.

14) 0 1 2 3 4 5 It’s important to me to fit into the group I’m with.

15) 0 1 2 3 4 5 My behavior often depends on how I feel others wish me to be.

16) 0 1 2 3 4 5 I am not always the person I appear to be.

17) 0 1 2 3 4 5 If I am the least bit uncertain as to how to act in a social situation, I look to the behavior of others for cues.

18) 0 1 2 3 4 5 I usually keep up with clothing style changes by watching what others wear.

19) 0 1 2 3 4 5 I sometimes have the feeling that people don’t know who I really am.

20) 0 1 2 3 4 5 When in a social situation, I tend not to follow the crowd, but instead behave in a manner that suits my particular mood at the time.
Appendix E

Self-Monitoring Scale

The following statements concern your personal reactions to a number of different situations. No two statements are exactly alike, so consider each statement carefully before answering. If a statement is TRUE or MOSTLY TRUE as applied to you, circle the T beside the statement. If a statement is FALSE or NOT USUALLY TRUE as applied to you, circle the F beside the statement. It is important that you answer as truthfully and as honestly as you can. Your answers will be kept in the strictest confidence.

1. T F I find it hard to imitate the behaviour of other people.

2. T F My behaviour is usually an expression of my true inner feelings, attitudes and beliefs.

3. T F At parties and social gatherings, I do not attempt to do things or say things that others will like.

4. T F I can only argue for ideas which I already believe.

5. T F I can make impromptu speeches even on topics about which I have almost no information.

6. T F I guess I put on a show to impress or entertain people.

7. T F When I am uncertain how to act in a social situation, I look to the behaviour of others for cues.

8. T F I would probably make a good actor.

9. T F I rarely need the advice of my friends to choose movies, books or music.

10. T F I sometimes appear to others to be experiencing deeper emotions than I actually am.

11. T F I laugh more when I watch a comedy with others than when alone.
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<td>12.</td>
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<td>13.</td>
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<td>14.</td>
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<td>25.</td>
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# APPENDIX F

**Eysenck Personality Inventory**

PLEASE ANSWER EACH OF THE QUESTIONS BELOW BY CHECKING OFF EITHER YES OR NO

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td>1. Do you often long for excitement?</td>
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<td>2. Do you oft need understanding friends to cheer you up?</td>
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<td>3. Are you usually carefree?</td>
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<td>4. Do you find it very hard to take no for an answer?</td>
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<td>5. Do you stop &amp; think things over before doing anything?</td>
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<td>6. If you say you will do something, do you always keep your promise, no matter how inconvenient it might be to do so?</td>
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<td>7. Does your mood often go up and down?</td>
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<td>8. Do you generally do and say things without stopping to think?</td>
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<td>9. Do you ever feel “just miserable” for no good reason?</td>
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<td>10. Would you do almost anything for a dare?</td>
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<td>11. Do you suddenly feel shy when you want to talk to an attractive stranger?</td>
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<td>12. Once in a while do you lose your temper &amp; get angry?</td>
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<tr>
<td>13. Do you often do things on the spur of the moment?</td>
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</table>
14. Do you often worry about things you should not have done or said?  

15. Generally, do you prefer reading to meeting people?  

16. Are your feelings rather easily hurt?  

17. Do you like going out a lot?  

18. Do you occasionally have thoughts and ideas you would not like other people to know about?  

19. Are you sometimes bubbling over with energy and sometimes very sluggish?  

20. Do you prefer to have few but special friends?  

21. Do you daydream a lot?  

22. When people shout at you, do you shout back?  

23. Are you often troubled by feelings of guilt?  

24. Are all your habits good and desirable ones?  

25. Can you usually let yourself go and enjoy yourself at a lively party?  

26. Would you call yourself tense or “highly strung”?  

27. Do other people think of you as lively?  

28. After you have done something very important do you often come away feeling you could have done better?  

29. Are you mostly quiet when you are with other people?  

30. Do you sometimes gossip?
<table>
<thead>
<tr>
<th>Question</th>
<th>YES</th>
<th>NO</th>
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<tbody>
<tr>
<td>31. Do ideas run through your head so that you cannot sleep?</td>
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<td>32. If there is something you want to know about, would you rather look up in a book than talk to someone about it?</td>
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<td>33. Do you get palpitations or thumping in your heart?</td>
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<td>34. Do you like the kind of work that you need to pay close attention to?</td>
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<td>35. Do you get attacks of shaking or trembling?</td>
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<td>36. Would you declare everything at customs, even if you knew that you would never be found out?</td>
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<td>37. Do you hate being with a crowd who always play jokes on one another?</td>
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<td>38. Are you an irritable person?</td>
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<td>39. Do you like doing things in which you have to act quickly?</td>
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<td>40. Do you worry about awful things that might happen?</td>
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<td>41. Are you slow and unhurried in the way you move?</td>
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<td>42. Have you been late for an appointment or work?</td>
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<td>43. Do you have many nightmares?</td>
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<td>44. Do you like talking to people so much that you would never miss a chance of talking to a stranger?</td>
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<tr>
<td>45. Are you troubled by aches and pains?</td>
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<tr>
<td>46. Would you be very unhappy if you could not see lots of people most of the time?</td>
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</table>
47. Would you call yourself a nervous person?

48. Of all the people you know, are there some whom you definitely do not like?

49. Would you say you were fairly self-confident?

50. Are you easily hurt when people find fault with your work?

51. Do you find it hard to really enjoy yourself at a lively party?

52. Are you troubled with feelings of inferiority?

53. Can you easily get some life into a dull party?

54. Do you sometimes talk about things you know nothing about?

55. Do you worry about your health?

56. Do you like playing pranks on others?

57. Do you suffer from sleeplessness?
Appendix G

Self Esteem Scale

INSTRUCTIONS: Please indicate your degree of agreement or disagreement with each of the following statements by circling the appropriate option for each statement.

SA = Strongly Agree
A = Agree
D = Disagree
SD = Strongly Disagree

1. On the whole, I am satisfied with myself.  
2. At times I think I am no good at all.  
3. I feel that I have a number of good qualities.  
4. I am able to do things as well as most other people.  
5. I feel that I do not have much to be proud of.  
6. I certainly feel useless at times.  
7. I feel that I'm a person of worth, at least on an even plane with others.  
8. I wish I could have more respect for myself.  
9. All in all I am inclined to feel that I am a failure.  
10. I take a positive attitude toward myself.
Appendix H

Demographic Information

Name: ______________________

Student # __________________

Sex: M  F

The following questions concern any siblings you might have:

How many older sisters do you have? ______

How many older brothers do you have? ______

How many younger sisters do you have? ______

How many younger brothers do you have? ______

Do you have a twin sister? ______

Do you have a twin brother? ______
APPENDIX I

Social Suggestibility Scale

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Social Identification Scale

Please indicate the degree to which each of the following statements is characteristic of you, on a scale of 0 to 6, where:

0 means “NOT AT ALL CHARACTERISTIC OF ME”
and 6 means “EXTREMELY CHARACTERISTIC OF ME”.

Please circle the appropriate number after each statement.

---------------------------------

1. I believe that good luck charms don’t work. 0 1 2 3 4 5 6

2. I think that for most questions there is more than just one right answer, if a person is able to get all of the facts. 0 1 2 3 4 5 6

3. I am often troubled by feelings of guilt. 0 1 2 3 4 5 6

4. In social situations, I would rather be a leader than a follower. 0 1 2 3 4 5 6

5. I believe that most people are just too negative and skeptical. 0 1 2 3 4 5 6

6. I usually win arguments with my friends or co-workers. 0 1 2 3 4 5 6

7. I often select a product from a store because of advertising I have heard or seen for that product. 0 1 2 3 4 5 6

8. I tend to form an opinion on topics without having to consider what other people think. 0 1 2 3 4 5 6
9. I tend to like the same types of music that my friends do.

10. I usually publicly agree with my friends about how good a movie or show was even though I privately disagree.

11. After reading a negative review of a movie I liked, I sometimes reconsider how much I really liked the movie in the first place.

12. I usually trust a salesperson to give me the best deal for something I'd like to buy.

13. Overall, I'm an agreeable person.

14. Once I make up my mind, nothing anyone says or does can change it.

15. I often buy the same type of products that my friends already own.

16. My feelings aren't easily hurt.

17. I am usually open to suggestion.

18. I am more "strong-willed" than most people.

19. I would rather go along with the crowd than make waves.

20. I'm not usually aware of my appearance.

21. I think that I would make a good negotiator.

22. I often find that I have a song running through my head, which I had heard or thought of sometime earlier.

23. I consider other people's feelings and desires before acting.

24. I am more opinionated than most people.
25. I think that nonconformity is a negative attribute in a person.  
   0 1 2 3 4 5 6

26. I would rather work something out for myself than accept guidance from an expert.  
   0 1 2 3 4 5 6

27. I think that most people are too trusting for their own good.  
   0 1 2 3 4 5 6

28. I sometimes create an argument just for fun.  
   0 1 2 3 4 5 6

29. My behaviour is more often a reflection of the situation I'm in than my true personality.  
   0 1 2 3 4 5 6

30. I am less easily influenced by others than are most people.  
   0 1 2 3 4 5 6

31. I have sometimes fallen for a story that turned out to be untrue.  
   0 1 2 3 4 5 6

32. I am usually unconcerned with other people's opinions of me.  
   0 1 2 3 4 5 6

33. I am not easily fooled.  
   0 1 2 3 4 5 6

34. I think that there's nothing wrong with going along with the crowd.  
   0 1 2 3 4 5 6

35. I can't stand other people telling me what to do.  
   0 1 2 3 4 5 6

36. I would rather accept some guidance from an expert than work something out for myself.  
   0 1 2 3 4 5 6

37. I'm pretty flexible in my opinions.  
   0 1 2 3 4 5 6

38. In my opinion, many so-called "experts" are really frauds.  
   0 1 2 3 4 5 6

39. I sometimes find that I yawn if someone else in the room yawns.  
   0 1 2 3 4 5 6
40. I believe that it's usually wrong to just go along with the crowd.

41. Sometimes even the sight or smell of food is enough to make me hungry.

42. All other things being equal, I usually feel better on a bright, sunny day than on an overcast cloudy day.

43. I get annoyed when someone tries to offer me suggestions about how to do something.

44. I'm concerned about my style of doing things.

45. Watching a sad movie or reading a sad story usually makes me feel sad.

46. I'm self-conscious about the way I look.

47. I usually worry about making a good impression.

48. One of the last things I do before I leave home is look at myself in the mirror.

49. I'm concerned about what other people think of me.

50. I'm usually aware of my appearance.

51. If there is any criticism, or anyone says anything about me, I just can't take it.

52. I don't say much at social affairs because I'm afraid that people will criticize me or laugh at me if I say the wrong thing.

53. In order to get along and be liked, I tend to be what other people expect me to be rather than anything else.

54. I'm concerned about the way I present myself.
55. I feel self-conscious when I'm with people who have a superior position to mine in business or at school.

56. I tend to like different types of music than my friends do.

57. I usually lose arguments with my friends or coworkers.

58. I guess I put on a show to impress people. I know I'm not the person I pretend to be.

59. I'm very sensitive. People say things and I have a tendency to think they're criticizing me or insulting me in some way, and later when I think of it, they may not have meant anything like that.

60. When I'm in a group, I usually don't say much for fear of saying the wrong thing.

61. I live too much by other people's standards.

62. My behaviour is usually an expression of my true inner feelings, attitudes and beliefs.

63. At parties and social gatherings, I do not attempt to do things or say things that others will like.

64. I guess I put on a show to impress or entertain people.

65. When I am uncertain how to act in a social situation, I look to the behaviour of others for cues.

66. I rarely need the advice of friends to choose movies, books, or music.

67. I laugh more when I watch a comedy with others than when alone.

68. In different situations and with different people, I often act like very different persons.
69. Even if I am not enjoying myself, I often pretend to be having a good time. 0 1 2 3 4 5 6

70. I'm not always the person that I appear to be. 0 1 2 3 4 5 6

71. I would not change my opinions (or the way that I do things) in order to please someone else or win their favor. 0 1 2 3 4 5 6

72. In order to get along and be liked, I tend to be what other people expect me to be rather than anything else. 0 1 2 3 4 5 6

73. I have trouble changing my behaviour to suit different people and different situations. 0 1 2 3 4 5 6

74. I may deceive people by being friendly when I really dislike them. 0 1 2 3 4 5 6

75. It is my feeling that if everyone else in a group is behaving in a certain manner, this must be the proper way to behave. 0 1 2 3 4 5 6

76. I actively avoid wearing clothes that are not in style. 0 1 2 3 4 5 6

77. At parties I usually try to behave in a manner that makes me fit in. 0 1 2 3 4 5 6

78. I try to pay attention to the reactions of others to my behaviour in order to avoid being out of place. 0 1 2 3 4 5 6

79. I find that I tend to pick up slang expressions from others and use them as part of my own vocabulary. 0 1 2 3 4 5 6

80. I tend to pay attention to what others are wearing. 0 1 2 3 4 5 6

81. The slightest look of disapproval in the eyes of a person with whom I am interacting is enough to make me change my approach. 0 1 2 3 4 5 6
82. It's important for me to fit in with the group I'm with.

83. My behaviour often depends on how I feel others wish me to behave.

84. If I am the least bit uncertain as to how to act in a social situation I look to the behaviour of others for cues.

85. I usually keep up with clothing style changes by watching what others wear.

86. When in a social situation, I tend not to follow the crowd, but instead behave in a manner that suits my particular mood at the time.

87. When in a group of people, I usually do what the others want rather than make suggestions.

88. I think that there are a few people who just cannot be trusted.

89. I get very tense and anxious when I think other people are disapproving of me.

90. I must admit that I often try to get my own way regardless of what others may want.

91. I'd say that there is something wrong with a person who can't take orders without getting angry or resentful.

92. I always try to consider the other person's feelings before I do something.

93. I think that it takes a lot of argument to convince most people of the truth.

94. I fall in and out of love rather easily.

95. I consider a matter from every standpoint before I make a decision.
96. It's hard for someone to cheer me up if I'm in a bad mood. 0 1 2 3 4 5 6

97. Criticism or scolding makes me very uncomfortable. 0 1 2 3 4 5 6

98. I feel that a person should adapt his or her ideas and behaviour to the group that happens to be with him or her at the time. 0 1 2 3 4 5 6

99. I do not mind taking orders and being told what to do. 0 1 2 3 4 5 6

100. My behaviour is more often a reflection of my true personality than the situation I'm in. 0 1 2 3 4 5 6

101. I think most people would lie to get ahead. 0 1 2 3 4 5 6

102. I never make judgements about people until I am sure of all the facts. 0 1 2 3 4 5 6

103. I commonly wonder what hidden reason another person may have for doing something nice for me. 0 1 2 3 4 5 6

104. Sometimes I rather enjoy going against the rules and doing things I'm not supposed to do. 0 1 2 3 4 5 6

105. I have often gone against my parents' wishes. 0 1 2 3 4 5 6

106. I am easily hurt when people find fault with my work. 0 1 2 3 4 5 6

107. I must admit I try to see what others think before I take a stand. 0 1 2 3 4 5 6

108. My feelings of happiness or sadness are largely influenced by the people that I am with at the time. 0 1 2 3 4 5 6

109. I often think about how I look and what impression I am making upon others. 0 1 2 3 4 5 6
110. I would be willing to describe myself as a pretty “strong” personality.

111. I usually try to do what is expected of me and to avoid criticism.

112. I have strong political opinions.

113. Seeing someone else enjoying good food often makes me want some.

114. I believe that for most questions there is just one answer. Once a person is able to get all of the facts.

115. It’s pretty easy for people to win arguments with me.

116. I have a natural talent for influencing people.

117. My feelings are easily hurt.

118. I am more easily influenced by others than are most people.

119. I feel that nonconformity is a positive attribute in a person.

120. I believe that horoscopes are right too often for it to be a coincidence.

121. I would declare everything at customs, even if I knew that I would never be found out.

122. Horror movies sometimes frighten me.

123. Speaking with a depressed person can often make me feel depressed as well.

124. Hearing a favorite song on the radio usually lifts my spirit.
Appendix J

Design Rating Task Instructions

Please read the following instructions carefully.

On the following pages, you will find a number of simple line drawings. We would like you to rate each drawing for its “attractiveness”.

Do not use too stringent a standard of attractiveness. Do not expect the shapes to be as spectacular and breathtaking in their beauty as a mountain landscape or as an extremely attractive person. If you used such a stringent standard, then all of the shapes would have low appeal by comparison. Rate the shapes for their subtle and simplistic attractiveness and not for any breathtaking or spectacular qualities.

Ratings should be made on a scale of 0 to 10, where 0 represents “Not at all attractive”, and 10 represents “Very attractive”. You may of course chose any number from 0 to 10 for each rating.

We are particularly interested in seeing if we can reproduce the findings from an earlier study. We obtained ratings from two groups of students: those who went on to successfully complete their university degree (university graduates), and those who dropped out of university before finishing their degree (university dropouts). The average rating for each group is shown beside each drawing. These ratings are presented to give you an idea of how these other two groups made their ratings.

Please consider each drawing on the next few pages, and circle the appropriate number for each of “Your ratings”.

Once you have completed the ratings, continue on to the questionnaires, but please don’t return to the ratings pages once you start the questionnaires.

If you have any questions, you may ask the investigator.

Begin now.
University dropout rating: 0 1 2 3 4 5 6 7 8\textcircled{9} 10
University graduate rating: 0 1 2 3 4 5 6 7\textcircled{8} 9 10
Your rating: 0 1 2 3 4 5 6 7 8 9 10

University dropout rating: 0 1 \textcircled{9} 3 4 5 6 7 8 9 10
University graduate rating: 0 1 \textcircled{2} 3 4 5 6 7 8 9 10
Your rating: 0 1 2 3 4 5 6 7 8 9 10

University dropout rating: 0 1 \textcircled{9} 3 4 5 6 7 8 9 10
University graduate rating: 0 1 2 3 4 5 6 7 8\textcircled{9} 10
Your rating: 0 1 2 3 4 5 6 7 8 9 10

University dropout rating: 0 1 2 3 4 5 6 7 8 9 10
University graduate rating: 0 1 2 3 4\textcircled{9} 6 7 8 9 10
Your rating: 0 1 2 3 4 5 6 7 8 9 10

University dropout rating: 0 1 2 3 4 5 6 7 8\textcircled{9} 10
University graduate rating: 0 1 2 3 4 5 6 7 8 9 10
Your rating: 0 1 \textcircled{2} 3 4 5 6 7 8 9 10

University dropout rating: 0 \textcircled{7} 2 3 4 5 6 7 8 9 10
University graduate rating: 0 1 2 3 4 5 6 7 8 9 10
Your rating: 0 1 2 3 4 5 6 7 8\textcircled{9} 10
Appendix K

Compliance Scale

Please respond to each item below by circling either True (T) or False (F).

1. I find it very difficult to tell people when I disagree with them.  T  F
2. I strongly resist being pressured to do things I don't want to do.  T  F
3. I generally believe in doing as I am told.  T  F
4. I tend to go along with what people tell me even when I know that they are wrong.  T  F
5. I tend to give in to people who insist that they are right.  T  F
6. I give in easily to people when I am pressured.  T  F
7. I generally try to avoid confrontation with people.  T  F
8. People in authority make me feel uncomfortable and uneasy.  T  F
9. I am not too concerned about what people think of me.  T  F
10. Disagreeing with people often takes more time than it is worth.  T  F
11. I tend to become easily alarmed and frightened when I am in the company of people in authority.  T  F
12. When I was a child I sometimes took the blame for things I had not done.  T  F
13. As a child I always did what my parents told me.  T  F
14. I try to please others.  T  F
15. I try very hard not to offend people in authority.  
17. I would never go along with what people tell me in order to please them.  
18. I would describe myself as a very obedient person.  
19. I try hard to do what is expected of me.  
20. When I am uncertain about things I tend to accept what people tell me.
APPENDIX I

Conformity Scale

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**Social Conventionality Scale**

Below are several statements concerning one's behaviour in social groups. Indicate the degree to which you agree with each statement according to the following scale:

- **SA** = Strongly agree
- **A** = Agree
- **D** = Disagree
- **SD** = Strongly disagree

---

1. A group cannot expect to maintain its identity unless its members all think and feel in very much the same way.  
   [_____]

2. When almost everyone agrees on something, there is little reason to oppose it.  
   [_____]

3. A good group member should agree with other members.  
   [_____]

4. We should alter our needs to fit society's demands rather than change society to fit our needs.  
   [_____]

5. To get along well in a group, you have to follow the lead of others.  
   [_____]

6. It's better to go along with the crowd than to be a martyr.  
   [_____]

7. It is best not to express your views when in the company of friends who disagree with you.  
   [_____]

8. To become a success these days, a person has to act in the way that others expect him/her to act.  
   [_____]

9. A person should adapt his or her ideas and behaviour to the group that happens to be with him or her at the time.  
   [_____]
10. Adherence to convention produces the best type of citizen.  
11. It is important for friends to have similar opinions.  
12. Before a person does something, he or she should try to consider how his or her friends will react to it.  
13. To be successful, a group's members must act and think alike.  
14. It is one's duty to conform to the passing demands of the world and to suppress those personal desires that do not fit these demands.  
15. It is more important to be loyal and to conform to our own group than to try to cooperate with other groups.  
16. It is extremely uncomfortable to go accidentally to a formal party in street clothes.
APPENDIX M

Exogenous / Endogenous Orientation Scale

----------------------------------------

**Personal Attitude Questionnaire**

Below are several statements. Read each statement and indicate the degree to which it is characteristic of you according to the following scale:

1 = Not at all characteristic of me  
2 = Slightly characteristic of me  
3 = Moderately characteristic of me  
4 = Very characteristic of me  
5 = Extremely characteristic of me

There are no right and wrong answers to any of these items. Please be as accurate and as honest as you can be in expressing your personal attitudes.

----------------------------------------

____ 1. When I am uncertain how to act in certain situations, I look to the behaviour of others for clues.

____ 2. It is important for me to be true to myself.

____ 3. I think it's okay for me to be a different kind of person depending on who I'm with.

____ 4. I try not to let other people influence me any more than is necessary.

____ 5. I agree with Thoreau when he said that everyone should "march to the beat of a different drummer".

____ 6. I try to behave in ways that help me fit into whatever situation I'm in.

____ 7. To achieve my goals, I sometimes lead others to form certain impressions of me.
8. I would teach my children that it's okay to try to make certain impressions on people.

9. I always behave consistently with my personal ethics.

10. My behaviour should always be based on my personal ethics and morals.

11. For me, there are few things worse than being a hypocrite who believes one thing but does another.

12. I think that the old saying "When in Rome, do as the Romans do" is good advice.
Appendix N

Suggestibility Subscales from Factor Analysis

Factor 1

89. I get very tense and anxious when I think other people are disapproving of me.
83. My behaviour often depends on how I feel others wish me to behave.
53. In order to get along and be liked, I tend to be what other people expect me to be rather than anything else.
78. I try to pay attention to the reactions of others to my behaviour in order to avoid being out of place.
81. The slightest look of disapproval in the eyes of a person with whom I am interacting is enough to make me change my approach.
60. When I’m in a group, I usually don’t say much for fear of saying the wrong thing.
97. Criticism or scolding makes me very uncomfortable.
75. It is my feeling that if everyone else in a group is behaving in a certain manner, this must be the proper way to behave.
82. It’s important for me to fit in with the group I’m with.
111. I usually try to do what is expected of me, and to avoid criticism.
47. I usually worry about making a good impression.
65. When I am uncertain how to act in a social situation, I look to the behaviour of others for cues.
108. My feelings of happiness or sadness are largely influenced by the people that I am with at the time.
107. I must admit I try to see what others think before I take a stand.
10. I usually publicly agree with my friends about how good a movie or show was even though I privately disagree.
103. I commonly wonder what hidden reason another person may have for doing something nice for me.
29. My behaviour is more often a reflection of the situation I’m in than my true personality.
Factor 2

116. I have a natural talent for influencing people.
110. I would be willing to describe myself as a pretty “strong” personality.
6. I usually win arguments with my friends or co-workers.
28. I sometimes create an argument just for fun.
90. I must admit that I often try to get my own way regardless of what others may want.
18. I am more “strong-willed” than most people.
104. Sometimes I rather enjoy going against the rules and doing things I’m not supposed to do.
4. In social situations, I would rather be a leader than a follower.
105. I have often gone against my parents’ wishes.
14. Once I make up my mind, nothing anyone says or does can change it.

Factor 3

34. I think that there’s nothing wrong with going along with the crowd.
37. I’m pretty flexible in my opinions.
15. I often buy the same type of products that my friends already own.
99. I do not mind taking orders and being told what to do.
7. I often select a product from a store because of advertising I have heard or seen for that product.
71. I would not change my opinions (or the way that I do things) in order to please someone else or win their favor. (Reverse scored)
12. I usually trust a salesperson to give me the best deal for something I’d like to buy.
112. I have strong political opinions. (Reverse scored)

Factor 4

31. I have sometimes fallen for a story that turned out to be untrue.
122. Horror movies sometimes frighten me.
124. Hearing a favorite song on the radio usually lifts my spirit.
113. Seeing someone else enjoying good food often makes me want some.
39. I sometimes find that I yawn if someone else in the room yawns.
41. Sometimes even the sight or smell of food is enough to make me hungry.
45. Watching a sad movie or reading a sad story usually makes me feel sad.

**Factor 5**

92. I always try to consider the other person’s feelings before I do something.
23. I consider other people’s feelings and desires before acting.
95. I consider a matter from every standpoint before I make a decision.
8. I tend to form an opinion on topics without having to consider what other people think.  (Reverse scored)
END

22·12·92

FIN