Extending the social information processing perspective: New links to attitudes, behaviors, and perceptions

DOI: 10.1016/0749-5978(90)90037-A

CITATIONS
137

READS
821

2 authors, including:

J. Kevin Ford
Michigan State University

97 PUBLICATIONS 9,646 CITATIONS

Some of the authors of this publication are also working on these related projects:

- Framework for improving Training Efficiency and Effectiveness View project
- MSU Primary Care Faculty Development Fellowship View project

All content following this page was uploaded by J. Kevin Ford on 24 April 2018.

The user has requested enhancement of the downloaded file.
Extending the Social Information Processing Perspective: 
New Links to Attitudes, Behaviors, and Perceptions

MARY D ZALESNY

School of Business Administration, University of Missouri—St. Louis

AND

J. KEVIN FORD

Michigan State University

Salancik and Pfeffer (1977, 1978) proposed a model of social information 
processing that specified complex linkages between information, its social 
context, perceptions, attitudes, and behaviors. Research conducted on the 
model is reviewed from the perspective of the model linkages. Results indicate 
that few of the linkages proposed have been empirically tested, with consistent 
support found only for the effects of social information on satisfaction. Relev-
ant models and concepts from the cognition, social judgment, persuasive 
communication, and attitude change literatures are used to extend the social 
information processing perspective to include personal and situational factors 
related to depth of information processing, attitude strength and stability, 
and issues of time and attitude change. Revised models of social informa-
tion processing are developed and directions for future research are pre-

Ten years ago Salancik and Pfeffer (1977, 1978) articulated a social 
information processing (SIP) perspective of job attitudes that departed 
from existing need-satisfaction and expectancy theory explanations (e.g., 
Hackman & Oldham, 1976; Locke, 1976; Porter, 1961; Porter & Lawler, 
1968; Vroom, 1964). Whereas these need-based theories view attitudes as 
a function of personal characteristics (i.e., needs), Salancik and Pfeffer 
(1978) proposed that attitudes and needs are cognitive products resulting 
from the processing of information about the attitude object and about 
past behaviors in a social context.

The general notion that social information affects perceptions, atti-
tudes, and behavior is not a novel one. It has received empirical support

The authors thank J. Richard Hackman and Gerald R. Salancik and two anonymous 
reviewers for their helpful comments on earlier drafts. Address all correspondence and 
requests for reprints to Mary D Zalesny, School of Business Administration, University of 
Missouri—St. Louis, 8001 Natural Bridge Road, St. Louis, MO 63121-4499.
from basic social psychological research on object and person perception (Asch, 1951, 1956), social influence (Festinger, 1954; Kelman, 1961), persuasive communication (Hovland, Janis, & Kelley, 1953), evaluation of risk (Myers & Lamm, 1976), and behavior in groups (Hackman, 1976). It also is found in descriptions of discrepancy theories of satisfaction, where needs are described as innate, objective requirements for survival and values are seen as socially learned, subjective desires that guide behavior to satisfy one’s needs (Locke, 1976). What sets the SIP perspective apart from need-based approaches to attitudes and behavior is the explicit link made between the social environment and the processing of information in the development of job attitudes.

As a general approach to understanding how people process information, the SIP perspective has broad organizational implications related to organizational socialization and change processes. Because the SIP model had implications for job design, it came to be seen as a competing model to the job characteristics model (JCM; Hackman & Oldham, 1976; Griffin, 1987; Staw & Ross, 1985) in explaining employee reactions to their jobs. Consequently, most empirical tests of the SIP model have focused on the relationship of social cues to job design, perceptions, and attitudes.

There have been two reviews of the SIP perspective and the research conducted on the model (Blau & Katerberg, 1982; Thomas & Griffin, 1983). These reviews took as given the theoretical framework of SIP and did not question its underlying assumptions or proposed linkages. They also ignored the basic social psychological literature on social influence, persuasion, and attitude formation and change that lie at the heart of the SIP perspective. Unlike previous reviews, we examine the SIP model from the perspective of its theoretical framework by focusing on the proposed linkages between the social environment and information and between information and attitudes, perceptions, and behaviors. Our purposes in this review are twofold: (1) to evaluate the SIP model and empirical research on the model as they contribute toward understanding social influence, information processing, and job attitudes and (2) to develop a revised model of social information processing which integrates contributions from areas of cognition, social judgment, persuasive communication, and attitude change. We begin with a description of the SIP model.

THE SIP MODEL

Salancik and Pfeffer (1978) argue that attitudes and needs are not givens, but rather are the products of information processing activities of individuals trying to make sense of their world. Needs and attitudes are labels for the causes and meaning attributed to observable behavior that have no
apparent external causes. Because "sense-making" activities occur in a social context, they and their products (i.e., attitudes and needs) cannot be understood in isolation from their social context. The SIP model, then, explicitly emphasizes the social component of information processing in the development of attitudes and needs.

According to the SIP model, attitudes (about a job or any objects or events) are derived from salient, relevant, and credible information. The information is frequently social, has many sources, and has several paths through which it can influence attitudes. Sources of social information about a job are, for example, observations made about a job, behavioral experience with a job, or comments from other people about a job. The information from any of these sources can be either immediate or recalled. Following one path, observations made about a job can be integrated with information recalled from prior experiences and related attitudes, and with information from what others think and feel about the object. Although the details of the integration are not formally considered in the model, other information processing models (e.g., Anderson's information integration theory) have been proposed to specify how various pieces of information are utilized when attitudes and needs are formed (Shaw, 1980).

Following a second path, individuals can observe and generate reasons for their behavior (i.e., attitudes, needs, or external causes). The attributions made about one's behavior are affected by (a) the extent to which a person is committed to the behavior, (b) the existence of social norms that provide a legitimate explanation for or give meaning to the behavior, and (c) salient past behaviors that are recalled during this information processing activity. Following a third path, comments about what others think about a job can provide a direct and socially acceptable interpretation or evaluation of a job than can suggest to an individual a socially appropriate attitude or belief to espouse or an appropriate justification for behavior. For example, co-worker interactions can provide normative information about what an employee's attitudes should be toward management, a particular supervisor, or specific company policies.

Information from any source highlights certain aspects of an object or situation, thereby focusing or structuring attention (see, for example, Wyer, 1980; Wyer, Srull, Gordon, & Hartwick, 1982) and affecting the salience of other information (Wyer & Srull, 1986). The model proposes that attitudes derive from salient, credible, and relevant social information available at the time the attitudes are expressed. Consequently, anything that affects information relevance, credibility, and salience should affect resultant attitudes. For example, having personal experience with low paying jobs and poor working conditions or hearing co-workers relate their opinions about their pay and work environment may make pay and
working conditions the most salient features of the current job to an individual and the most salient and relevant information on which job attitudes are based.

Model Linkages

The SIP model suggests that social information can affect perceptions, attitudes, and behaviors. Relationships among these four constructs are mediated through the functioning of complex processes that include attribution (i.e., assignment of causality and meaning), perception/judgment (i.e., interpretation and labeling), evaluation/choice (i.e., determination of value, selection among alternatives), enactment (i.e., creating social reality through one's own behavior), and social reality construction (i.e., creating social reality through informational social influence, e.g., social comparisons). These processes, in turn, are influenced by past and present experiences. For purposes of this review we have labeled the major linkages of the social information processing model proposed by Salancik and Pfeffer. We believe that a review focused on these linkages has great potential for evaluating what we have learned regarding the impact of the social context on perceptions, attitudes, and behavior as well as guiding future theoretical and empirical efforts.

Figure 1 provides an overview of the SIP model proposed by Salancik and Pfeffer (1977, 1978) and the linkages among the model constructs. The
linkages are labeled to represent their connections to three possible consequences of information processing: (a) "P", for perceptions, (b) "A", for attitudes, and (c) "B", for behaviors.

Linkage "P1" represents the focusing or structuring function of social information that influences what aspects of a job (or other object or event) are attended to. This information derives from an individual's construction of a social context and is denoted by "P3." Linkage "P2" represents the integration of information about current job characteristics with other information from one's social context (e.g., past experiences) through perception and judgment processes.

Linkage "A1" reflects information from the social context that provides a direct and socially acceptable job attitude or belief to espouse. The source of this information is the ongoing creation of social reality by self and others and is represented by linkage "A3." Linkage "A2" reflects the use of information obtained from expressed attitudes for directing behavior through evaluation and choice processes.

Linkage "B1" represents information from the social context that provides an acceptable justification for behavior. Self-observation of the ensuing behavior provides salient information from which attitudes and needs are formed. This linkage between behaviors and attitudes/needs, which is labeled "B2," is the result of attributional processes. Finally, linkage "B3" represents the enactment process through which social reality is partially determined by one's behavior.

A REVIEW OF EMPIRICAL RESEARCH

Previous reviews of the SIP perspective and tests of the model have been structured around conceptual and procedural shortcomings of the model and the research these generated (Blau & Katerberg, 1982) or around descriptions of past research on the model (Thomas & Griffin, 1983). The present review is structured around the linkages, proposed in the original formulation of the SIP model (Salancik and Pfeffer, 1978), that connect the various potential sources of information for attitude development to resulting attitudes. In addition to summarizing the past 10 years of research on the SIP model following a traditional review format, we also examine (a) which of the SIP model linkages have been included in the research questions that have directed the research efforts and (b) how the past 10 years of empirical research have further explicated, refined, or developed the model.

REVIEW OF THE LITERATURE

Twenty-seven studies were identified through a search of the major I/O psychology and management journals, conference proceedings, and the Psychological Index for the years 1977 through 1987. Studies were in-
cluded in the review if they specifically referred to the SIP model as a theoretical basis for the research reported. Table 1 describes each study including investigation type, sample, independent and dependent variables examined, consideration of individual differences on the processing of information received from social sources, SIP model linkages examined, and major findings.

To facilitate coding the linkages, each investigation's hypotheses, analyses, and results were examined. A study was coded as testing the P1, A1, or B1 linkages if a direct relationship between social information and perceptions, attitudes, or behaviors was investigated. Investigations coded as testing the P2 linkage specifically examined how task or work environment perceptions influenced attitudes/needs. Likewise, the A2 linkage was coded only if the influence of attitudes/needs on behaviors was examined; the B2 linkage was coded if behavioral attributions were examined. The P3, A3, or B3 linkage codes were used for studies that specifically investigated the processes by which past or present behaviors contributed to the perception of the social context (i.e., B3) or how the perceived social context influenced the information an individual derived from it.

**Type of Study and Sample**

Laboratory investigations using college students as subjects were the most frequently used approach to test hypotheses (16 of 27). The remaining 11 studies drew from a variety of occupational groups, including public health nurses, engineers, machine operators, newspaper employees, public service employees, and franchise representatives using field surveys, field experiments, and organizational simulations.

**Independent Variables**

Social cues were manipulated or assumed to vary in 23 of the 27 studies reviewed. Over two-thirds of the investigations used as the social cue manipulation statements made about an experimental task. Social cues also included the presumed influence of co-workers through an individual's group membership (Pfeffer, 1980), presence of others (Ferris, Fedor, Rowland, & Porac, 1985), group norms (O'Reilly & Caldwell, 1985), group discussion (Griffin, Bateman, & Skivington, 1983), and position in the organization's communication network (Dean & Brass, 1985). Other independent variables were task complexity (Blau, 1985a, 1985b; Griffin, 1983; Griffin et al., 1983; Griffin, Bateman, Wayne, & Head, 1987; O'Connor & Barrett, 1980; Oldham & Miller, 1979; O'Reilly & Caldwell, 1979; Weiss & Shaw, 1979; White & Mitchell, 1979); source of cues (Griffin et al., 1983; Schnake & Dumler, 1987; Thomas, 1986); source characteristics, such as competence (Blau, 1985a; Rakestraw & Weiss,

Task complexity has been manipulated through the design of the experimental task (e.g., increasing or decreasing skill variety or feedback available about a task) or has been measured and compared against normed task complexity data (see Hackman & Oldham, 1975). Early tests of whether social cues or task complexity had a stronger effect on task perceptions and satisfaction appear to have given way to concerns about the conditions under which social cues have their effect, and what factors influence the relative impact of both task complexity or social cues (Vance & Biddle, 1985).

**Dependent Variables**

Task perceptions (22 studies), task or job satisfaction (18 studies), and performance (9 studies) have been the predominant dependent variables used in SIP research. Although there has been a variety of measures used to assess satisfaction, task perceptions have typically been assessed using the Job Diagnostic Survey (JDS: Hackman & Oldham, 1975), and/or the Job Characteristics Inventory (JCI; Sims, Szilaygi, & Keller, 1976). Recent investigations have examined other dependent variables such as perceived anxiety about an organizational change (Miller & Monge, 1985), perceptions of the social and physical environment at work (Zalesny & Farace, 1986), role perceptions (Schnake & Dumler, 1987), intentions to perform the task in the future, task interest, and motivation (Zalesny, 1980), intentions to quit (Pfeffer, 1980), and performance goals set (Mitchell, Rothman, & Liden, 1985; Rakestraw & Weiss, 1981).

**Individual Differences**

Thirteen studies have examined individual differences to assess influenceability from social cues. For example, field dependence (Griffin et al., 1983; O'Connor & Barrett, 1980; Weiss & Nowicki, 1981; Weiss & Shaw, 1979), task experience (Mitchell et al., 1985; Rakestraw & Weiss, 1981; Vance & Biddle, 1985; Zalesny, 1980), locus of control (Blau, 1985a; Schnake & Dumler, 1987), self-esteem (Weiss & Shaw, 1979), evaluation apprehension (White et al., 1977), ability (Ferris et al., 1985; O'Connor & Barrett, 1980), and orientation toward work (O'Connor & Barrett, 1980) have been hypothesized to affect the likelihood of a person relying on available social cues as guides for attitudes, perceptions, and behavior.

**Linkages Examined and Study Findings**

Three paths or linkages depicted in the SIP model (see Fig. 1), through
<table>
<thead>
<tr>
<th>Investigators</th>
<th>Type of study</th>
<th>Sample</th>
<th>Independent variables</th>
<th>Dependent variables</th>
<th>Individual differences</th>
<th>Linkages examined</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>White, Mitchell, &amp; Bell, 1977</td>
<td>L</td>
<td>124 undergraduate students</td>
<td>Goal setting, Social cues (P/Nu/Ng)</td>
<td>Satisfaction,^a-s Performance^1</td>
<td>Evaluation apprehension</td>
<td>A1, B1</td>
<td>Performance affected by goal setting, apprehension, and cues; positive cues decreased boredom and job pressure</td>
</tr>
<tr>
<td>Oldham &amp; Miller, 1979</td>
<td>S</td>
<td>168 employees</td>
<td>Task perceptions (own &amp; co-workers)</td>
<td>Satisfaction,^a Performance^1</td>
<td></td>
<td>P2, B1</td>
<td>Satisfaction lowered and performance increased when own job seen as more complex than co-workers'</td>
</tr>
<tr>
<td>O‘Reilly &amp; Caldwell, 1979</td>
<td>L</td>
<td>75 graduate students</td>
<td>Task design, Social cues (P/Ng)</td>
<td>Task perceptions,^a,b Satisfaction,^b Suggested wage</td>
<td>Task perceptions^a</td>
<td>P1, P2, A1</td>
<td>Cues affected satisfaction, perceptions, and wage rate; task design affected satisfaction</td>
</tr>
<tr>
<td>Weiss &amp; Shaw, 1979</td>
<td>L</td>
<td>88 undergraduate students</td>
<td>Task design, Social cues (P/Nu)</td>
<td>Field dependence, Self-esteem</td>
<td></td>
<td>P1</td>
<td>Main effects for cues and task design; task perceptions affected by field dependence</td>
</tr>
<tr>
<td>White &amp; Mitchell, 1979</td>
<td>L</td>
<td>43 undergraduate students</td>
<td>Task design, Social cues (P/Ng)</td>
<td>Task perceptions,^a Performance,^1 Satisfaction,^a Motivation^a,k</td>
<td></td>
<td>P1, P2, A1, B1</td>
<td>Task design affected perceptions; cues affected satisfaction and productivity</td>
</tr>
<tr>
<td>O‘Connor &amp; Barrett, 1980</td>
<td>L</td>
<td>90 undergraduate students</td>
<td>Task design, Informational cues</td>
<td>Field dependence, Mental ability, Work orientation</td>
<td></td>
<td>P1</td>
<td>Cues affected perceptions; field dependence, orientation positively related and mental ability negatively related to task perceptions</td>
</tr>
<tr>
<td>O‘Reilly, Parlette, &amp; Bloom, 1980</td>
<td>S</td>
<td>76 public health nurses</td>
<td>Frame of reference, Satisfaction</td>
<td>Task perceptions^a</td>
<td>Professionalism</td>
<td>P1</td>
<td>Satisfaction, professionalism related to perceptions</td>
</tr>
<tr>
<td>Pfeffer, 1980</td>
<td>S</td>
<td>113 engineers</td>
<td>Task perceptions,^a,e Satisfaction,^a Intention to leave</td>
<td></td>
<td></td>
<td>P1, A1, B1</td>
<td>Group membership and tenure related to perceptions, satisfaction, and intention to leave</td>
</tr>
<tr>
<td>Zalesny, 1980</td>
<td>SO</td>
<td>154 hired employees</td>
<td>Social cues, (P/Nu/Ng)</td>
<td>Task perceptions,^a Satisfaction,^a Performance,^m Behavioral intentions, Task interest</td>
<td>Task experience</td>
<td>P1, A1, B1</td>
<td>Cues affected satisfaction, but persisted for negative cues only; positive cues affected intention for future performance</td>
</tr>
<tr>
<td>Rakestraw &amp; Weiss, 1981</td>
<td>L</td>
<td>174 undergraduate students</td>
<td>Model's performance</td>
<td>Performance,^1 Goals set, Performance satisfaction</td>
<td>Task experience</td>
<td>B1, B2</td>
<td>Model performance affected goals set performance for inexperienced subjects; discrepancy between own and model's performance negatively related to satisfaction</td>
</tr>
<tr>
<td>Shaw &amp; Weekley, 1981</td>
<td>L</td>
<td>189 undergraduate students</td>
<td>Social cues, (P/Nu/Ng), # of sources</td>
<td>Satisfaction, Performance,^1 Task perceptions^a</td>
<td>Field dependence</td>
<td>A1</td>
<td>Cues related to satisfaction</td>
</tr>
<tr>
<td>Weiss &amp; Nowicki, 1981</td>
<td>L</td>
<td>195 undergraduate students</td>
<td>Model's performance, Social cues (P/Ng)</td>
<td>Task satisfaction, Attributions for model's performance</td>
<td></td>
<td></td>
<td>Cues influenced satisfaction for field-dependent subjects; found cues × model performance effect for satisfaction for field-independent subjects</td>
</tr>
<tr>
<td>Griffin, 1983</td>
<td>L</td>
<td>50 undergraduate students</td>
<td>Social cues (P)</td>
<td>Task perceptions,^b Satisfaction^1</td>
<td></td>
<td>P1, A1</td>
<td>Positive cues from supervisor affected perceptions and satisfaction</td>
</tr>
<tr>
<td>Griffin, 1983</td>
<td>FE</td>
<td>375 machine operators</td>
<td>Social cues (P), Job change</td>
<td>Task perceptions,^b Satisfaction,^1 Productivity^1</td>
<td></td>
<td>P1, P2, A1, B1</td>
<td>Cues and job change affected perceptions and satisfaction; job change affected productivity; cue × job change interaction for selected task perceptions</td>
</tr>
<tr>
<td>Griffin, Bateman, &amp; Skivington, 1983</td>
<td>L</td>
<td>86 undergraduate students</td>
<td>Task design, Social cues (P/Ng), Source of cues</td>
<td>Task perceptions,^b Satisfaction</td>
<td>Field dependence, Authoritarianism</td>
<td>P1, P2, A1</td>
<td>Task design, supervisory cues positively related to intrinsic satisfaction; co-worker cues negatively related to extrinsic satisfaction, and positively related to co-worker satisfaction</td>
</tr>
<tr>
<td>Investigators</td>
<td>Type of study</td>
<td>Sample</td>
<td>Independent variables</td>
<td>Dependent variables</td>
<td>Individual differences</td>
<td>Linkages examined</td>
<td>Results</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------</td>
<td>---------------------</td>
<td>------------------------------------------------------------</td>
<td>----------------------------</td>
<td>------------------------</td>
<td>--------------------</td>
<td>-------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Blau, 1985a</td>
<td>L</td>
<td>156 undergraduate students</td>
<td>Task design, Social cues (P/Nu), Source competence</td>
<td>Task perceptions&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Locus of control</td>
<td>P1</td>
<td>Task design affected perceptions; positive cues from competent source influenced perceptions for internal locus of control</td>
</tr>
<tr>
<td>Dean &amp; Brass, 1985</td>
<td>S</td>
<td>140 newspaper employees</td>
<td>Communication centrality, Boundary spanning</td>
<td>Task perceptions&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td>P1</td>
<td>Extent of communication related to congruence in task perceptions</td>
</tr>
<tr>
<td>Ferris, Fedor, Rowland, &amp; Porac, 1985</td>
<td>L</td>
<td>96 undergraduate students</td>
<td>Presence of observer</td>
<td>Task perceptions&lt;sup&gt;a&lt;/sup&gt;, Performance&lt;sup&gt;em, m&lt;/sup&gt;, Satisfaction&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Sex (surrogate for ability and motivation)</td>
<td>P1, A1, B1</td>
<td>Observer facilitated performance for males, inhibited for females; affected perceptions of task significance for females</td>
</tr>
<tr>
<td>Miller &amp; Monge, 1985</td>
<td>S</td>
<td>146 public service employees</td>
<td>Information about change (P/Nu/Ng)</td>
<td>Reported anxiety</td>
<td>nPrivacy, nIndependence, Job level</td>
<td>A1</td>
<td>Information directly related to perceived helpfulness, indirectly related to anxiety; nPrivacy and level related to anxiety</td>
</tr>
<tr>
<td>Mitchell, Rothman, &amp; Liden, 1985</td>
<td>L</td>
<td>85 undergraduate students</td>
<td>Work-related cues</td>
<td>Performance&lt;sup&gt;l&lt;/sup&gt;, Goals set</td>
<td>Work experience</td>
<td>B1</td>
<td>Work-related cues led to higher performance</td>
</tr>
<tr>
<td>O'Reilly &amp; Caldwell, 1985</td>
<td>S</td>
<td>79 franchise reps</td>
<td>Group norms, Cohesiveness</td>
<td>Task perceptions&lt;sup&gt;a&lt;/sup&gt;, Satisfaction&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td>A1</td>
<td>Intensity of norms related to perceptions; cohesiveness related to task significance and co-worker satisfaction</td>
</tr>
<tr>
<td>Vance &amp; Biddle, 1985</td>
<td>L</td>
<td>80 undergraduate students</td>
<td>Social cues (P/Nu/Ng/Mixed)</td>
<td>Task perceptions&lt;sup&gt;a, b&lt;/sup&gt;, Satisfaction&lt;sup&gt;a&lt;/sup&gt;, Performance&lt;sup&gt;em&lt;/sup&gt;, Group interactions</td>
<td>Task experience</td>
<td>P1, A1, B1</td>
<td>Positive and mixed cues affected perceptions, performance, satisfaction, and motivation; but for performance effect minimized with task experience</td>
</tr>
<tr>
<td>Researcher and Year</td>
<td>Type</td>
<td>Sample Size</td>
<td>Dependent Variables</td>
<td>Context</td>
<td>Impact</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------</td>
<td>-------------</td>
<td>---------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thomas, 1986</td>
<td>S</td>
<td>94 nurses</td>
<td>Information sources</td>
<td>Task perceptions&lt;sup&gt;a,b&lt;/sup&gt;, Job tenure</td>
<td>Both internal and external sources influence perceptions; use of sources changed over time Information and personal experience restricted variability in perceptions of the environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zalesny &amp; Farace, 1986</td>
<td>FE</td>
<td>159 public service employees</td>
<td>Physical environment, Psychological states, Affective states</td>
<td>P1, A1</td>
<td>Information and personal experience restricted variability in perceptions of the environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bateman, Griffin, &amp; Rubinstein, 1987</td>
<td>L</td>
<td>110 undergraduate students</td>
<td>Social cues, Group discussion</td>
<td>Task perceptions&lt;sup&gt;a&lt;/sup&gt;, Satisfaction&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Group discussion led to changed task perceptions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Park, Rinning &amp; Pryor, 1987</td>
<td>L</td>
<td>128 undergraduate students</td>
<td>Social cues (P/Ng), Credibility</td>
<td>Task perceptions&lt;sup&gt;a&lt;/sup&gt;, Psychological states, Affective states</td>
<td>Social cues discounted when credibility of source is questionable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schnake &amp; Dumler, 1987</td>
<td>SO</td>
<td>30 hired employees</td>
<td>Social cues (P/Ng), Source of cues</td>
<td>Task perceptions&lt;sup&gt;a&lt;/sup&gt;, Satisfaction&lt;sup&gt;b&lt;/sup&gt;, Role perceptions&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Positive cues from supervisor affected perceptions of feedback, satisfaction, and role clarity; conflicting and no cues yielded role overload</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Griffin, Bateman, Wayne, &amp; Head, 1987</td>
<td>L</td>
<td>200 undergraduate students</td>
<td>Task design, Social cues (P/Ng)</td>
<td>Task perceptions&lt;sup&gt;a&lt;/sup&gt;, Satisfaction&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Effect of task design greater than social cues, cues enhanced effect of task design</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: For cues, P = positive, Nu = Neutral, Ng = Negative. For type of study, L = laboratory, S = survey, FE = field experiment, SO = simulated organization. The absence of a superscript for dependent variables indicates a researcher-developed scales was used.

<sup>a</sup> Job Diagnostic Survey (Hackman & Oldham, 1975);<sup>b</sup> Job Characteristic Inventory (Sims, Szilagyi, & Keller, 1976);<sup>c</sup> Attribute Description Scale (Barrett et al., 1975);<sup>d</sup> Work Itself/Work Environment Description Questionnaire (Cascio, 1973);<sup>e</sup> Michigan Organizational Assessment Questionnaire (ISR, 1975);<sup>f</sup> Semantic Differential Scale (Scott, 1967);<sup>g</sup> Job Descriptive Index (Smith, Kendall, & Hulin, 1969);<sup>h</sup> Brayfield-Rothe Satisfaction Scale (Brayfield & Rothe, 1951);<sup>i</sup> Minnesota Satisfaction Questionnaire (Weiss et al., 1964);<sup>j</sup> Satisfaction Index (Warr, Cook, & Wall, 1979);<sup>k</sup> Performance quantity;<sup>l</sup> Performance quality;<sup>m</sup> Role clarity (Rizzo, House, & Lirtzman, 1970) and role overload (Beehr, Walsh, & Tabor, 1976).
which information, perceptions, attitudes, and behavior influence each other, have dominated previous investigations. Twenty-two of the 27 studies reviewed examined the linkage between social information and perceptions (P1), 18 the linkage between social information and attitudes (A1), and 9 the linkage between social information and behavior (B1). Each of these linkages has been investigated either alone or in various combinations, for example, those denoting the perception/judgment (P2), evaluation/choice (A2), and attributional (B2) process linkages depicted in the model. None of the reality construction process linkages (P3, A3, B3) has been empirically investigated in the studies reviewed. In the following section, we shall review the linkages tested and the evidence supporting them.

Six of seven investigations found support for the predicted relationship between the presentation and availability of social information (i.e., informational or affective cues, position in the communication network, and group discussion) and task perceptions (P1 linkage). Positive statements or other social cues regarding a task resulted in more favorable task perceptions than negative or neutral statements or other social cues (see O'Reilly et al., 1980, for an exception).

Three of six studies investigating the linkages between social information and both task perceptions and attitudes (i.e., P1, A1) found support for both linkages (Griffin, 1983; O'Reilly & Caldwell, 1985; Park et al., 1987). However, in one study, social information was related to task perceptions and satisfaction only when the information source was credible (Park et al., 1987). The remaining three investigations of the P1, A1 linkages provided mixed support. Two studies found the expected relationship between type of social information received and task satisfaction (Schnake & Dumler, 1987; Shaw & Weekley, 1981), but did not provide conclusive evidence of a relationship between social information and task perceptions. One study that did find a relationship between social information and perceptions (Zalesny & Farace, 1986) differed from the others in that variance differences and not mean differences were hypothesized to result from exposure to social information. Nonevaluative information about the work environment generally resulted in greater homogeneity of variance in responses to questions about the environment, but did not affect variance in affective responses.

Four studies tested all three of the social information linkages with the model's outcome variables (perceptions (P1), attitudes (A1), and behavior (B1)). A survey of engineers revealed that social information, presumably received through one's membership in a work group, was significantly related to job perceptions, job attitudes, and performance (Pfeffer, 1980). A laboratory study using a video game as the experimental task found
Social information affected task perceptions, satisfaction, performance, and motivation on a categorization task that required group discussion to complete. With the exception of performance, social information affected the remaining dependent measures only when the individual was relatively inexperienced in performing the task (Vance & Biddle, 1985). Finally, an organizational simulation (Zalesny, 1980) found no effect for information given by an expert trainer on perceptions of an assembly task that required fine motor skills, but did find the expected effects for satisfaction and behavioral intentions.

Three laboratory studies tested the linkages of social information with task perceptions and attitudes (P1, A1) and between perceptions and attitudes (P2). One study (Griffin et al., 1987) found support for all three linkages, with task complexity having a greater effect on task perceptions and satisfaction than social cues. Griffin et al. (1983) found that task complexity and social information were related to reported satisfaction with, but not perceptions of, a financial analysis. O'Reilly and Caldwell (1979) found that task complexity was unrelated to task perceptions but social information from co-workers was related to task perceptions and satisfaction.

Two studies that investigated the linkage between social information and attitudes (A1) failed to find the hypothesized direct relationship. Weiss and Nowicki (1981) found that the influence stemming from the observation of a successful model performing an assembly task was a function of the observer's field dependence. Miller and Monge (1985) also found evidence of an indirect relationship between information attributed to one's co-workers and reported anxiety about an organizational change.

Five investigations tested unique linkage combinations. White et al. (1977) found that performance on a card-sorting task was enhanced by positive social cues and decreased by negative cues (B1, A1). Using the same task, Rakestraw and Weiss (1981) reported that task experience determined whether social information affected performance (B1); discrepancy between own and a model's performance influenced whether individual performance affected satisfaction (B2).

Mitchell et al. (1985) found a direct and positive relationship between work-relevant information and increased performance (B1) on a simple production task. Two other investigations tested the linkages of social information with perceptions (P1), attitudes (A1), and behavior (B1), and the linkage between task design and attitudes (P2). Both found support for the effects of task complexity and social information on satisfaction. A laboratory study found no relationship between social information pre-
sent by a confederate co-worker and perceptions of a stock pricing
task, but did find the expected effect of social information on performance
(White & Mitchell, 1979). In a field experiment (Griffin, 1983), task per-
ceptions and satisfaction of machine operators were influenced by a
change in the design of work and by task information received from their
supervisors. Only the work design change affected productivity.

Individual Differences

Thirteen studies investigated individual differences, such as field de-
pendence, as potential moderators. For example, the effect of social cues
on both task perceptions (Weiss & Shaw, 1979) and satisfaction (Weiss &
Nowicki, 1981) was found to be greater for field-dependent than field-
independent individuals. However, Weiss and Nowicki (1981) found that
field-independent individuals also were influenced by social cues when
the cues were presented as attitudes expressed by a successful perfor-
mance model. Two investigations found either no effects for field depen-
dence (Griffin et al., 1983) or main effects only (O'Connor & Barrett,
1980). In the latter investigation, field-dependent individuals perceived an
experimental task as more enriched than their field-independent counter-
parts.

Task experience also has been found to moderate the effects of social
information. Vance and Biddle (1985) showed that the effect of positive
and mixed social cues on task perceptions, satisfaction, and motivation
were minimized for experienced subjects. Rakestraw and Weiss (1981)
similarly reported that social cues available from a model's performance
affected goal setting and performance for inexperienced subjects only.
Ferris and his colleagues (1985) found a positive relationship for males
between the presence of an observer and performance on a video game
but a negative relationship for females. In this study, sex was used as a
surrogate for differential ability and experience with the task. In a survey
of medical personnel, job tenure affected the use and perceived impor-
tance of sources of information about one's job (Thomas, 1986).

Locus of control, social cue, and source competence interacted to af-
fect perceptions of an application-processing task (Blau, 1985a). Positive
cues from competent sources influenced task perceptions for individuals
with internal, but not external, locus of control. O'Connor and Barrett
(1980) found that people with high mental ability were less affected by
task enrichment information than were people with low mental ability.

Other studies testing for moderators found no conclusive evidence.
Individual needs (need for achievement, affiliation, autonomy, and dom-
inance) had no effect on the relationship of task complexity and social
cues with task perceptions, satisfaction, and desired wage rate (O'Reilly
& Caldwell, 1979), or role perceptions (Schnake & Dumler, 1987). Previ-
ous work experience was also unrelated to performance differences among individuals exposed to either work-related or work-unrelated performance cues (Mitchell et al., 1985). Finally, job level and need for privacy did not affect the relationship between informational cues and anxiety about an organizational change (Miller & Monge, 1985).

Summary of Results

According to the SIP model, social information is hypothesized to influence perceptions, attitudes, and behavior. It is clear, however, that attitudes are the focus of the model. They provide the link between information and behavior and between perceptions and behavior. Of the 18 investigations that assessed the relationship between cues from the social environment and job attitudes (i.e., satisfaction), 10 found that positive (or favorable) cues were positively related to higher reported satisfaction than did neutral or negative cues. Five of eight studies found that the relationship between social information and satisfaction was affected by individual differences including task experience, attributions made about the source, and field dependence.

The relationship of social cues with perceptions and performance also was generally positive. Five of the nine studies found that positive cues resulted in higher performance than did negative or neutral cues. Three studies suggested that the relationship was contingent on personal characteristics, and one failed to support the relationship. Eleven of the 22 studies reported that positive cues regarding a task resulted in more favorable perceptions of the task than negative or neutral cues. Three additional studies supported the moderating influence of individual differences, including task experience and source credibility. The remaining 8 studies failed to support the expected relationship.

In addition to assessing social cue effects on perceptions, attitudes, and behavior, many investigations of the SIP model have tested the effect of different levels of task complexity on both task perceptions and satisfaction. All six of the studies that manipulated task design also manipulated the social cues about the task available to subjects. The six studies found a main effect for task design on task perceptions. One study found that the effect of the social cues on task perceptions was greater than the effect of task complexity (O'Reilly & Caldwell, 1979); another found the reverse, i.e., task complexity had a greater effect on task perceptions than on social cues (Griffin et al., 1987). In the latter study, social cues intensified the effect of manipulated task complexity. Four of the six studies also found that task complexity was positively related to satisfaction.

Overall, evidence for a main effect for social information on task perceptions and attitudes is not particularly consistent or strong. Individual differences appear to influence the choice and use of available informa-
tion on the formation of attitudes and perceptions about a task. Also, there seems to be some consensus that ability or experience and susceptibility to influence are determinants of influence from social information. However, it is not clear that these are the only or the primary determinants; nor is it clear under what conditions they are most likely to have an effect.

CRITIQUE OF THE SIP RESEARCH

Salancik and Pfeffer (1978) intended that the SIP model “stimulate thinking about job attitudes in something other than a basic needsatisfaction framework” (p. 225), that is, as products of information processing in a social context. In the process of creating an alternative to the need-based models, they developed a model emphasizing the social component of job attitude formation. In fairness to Salancik and Pfeffer (1978), we note that they did not intend to present a fully developed theoretical model. Indeed, they describe their ideas most often as an approach or a perspective and only once refer to them as a model. We submit that a critical issue is how well the empirical research has tested and built upon the SIP framework toward the development of a theoretical model.

Simply stated, a theory is a “guide to tell you where to look for what you want to observe” (Runkel & McGrath, 1972, p. 23). Dubin (1976) described the basic features of a theoretical model as (a) the components or units whose interactions are the focus of the model, (b) specification of how the units interact with each other, (c) the boundaries or limits within which the model holds, (d) the conditions or contexts under which the model’s components interact differently, (e) propositions about how the model operates, (f) an operational definition or empirical indicator for each variable referred to in the propositions, and (g) testable hypotheses.

Components and Interactions

Of the seven characteristics of a good theoretical model presented above, the SIP model appears to contain only the first two. That is, the model components and their interactions are described. Although Salancik and Pfeffer state that the relationships among the components are mediated by psychological processes, the processes themselves are described minimally. For example, details of the perceptual/judgment and evaluation/choice processes mediating perceptions, attitudes, and behaviors are not formally considered in the model (see, for example, Salancik and Pfeffer, 1978, p. 230). Additionally, the process linking social information to behavior (i.e., B1 linkage) is not identified.

Empirical research has not led to any major changes in the original model. The basic components have not been questioned or altered as a
result of empirical findings. Only one study reviewed has examined component interactions by testing whether the mediating processes proposed by the SIP model occurred (Zalesny & Farace, 1986). Their findings suggest that perception and judgment processes not only mediate the linkage between perceptions and attitudes (i.e., P2) as suggested by the Salancik and Pfeffer (1978) model, but also mediate the P1 linkage between social information and job and task environment characteristics perceptions.

**Model Boundaries and Conditions**

Overall, the SIP model appears to be bounded by past experience, such that attitudes will derive from personal experiences when they exist. In the absence of personal experience, other information will be sought out. Salancik and Pfeffer (1978) acknowledge the dominant role of past experience and people’s preferences for information from others when confronted with an ambiguous situation, yet they neither explicitly state nor discuss the model’s boundaries. Even the boundary imposed by situational ambiguity is qualified in a footnote (see p. 228). Also, because Salancik and Pfeffer include past experience in their definition of social information, the model, in effect, is not limited or bounded. All perceptions, attitudes, and behaviors of an individual are presented as the cognitive products of information processing in a social context, which itself is a product of the individual’s behavior (see p. 233). With no indication of the context under which the model components might interact differently from that given by the model, it would appear that the model is presumed to operate uniformly across situations. Uniform predictions might facilitate the falsifiability of SIP hypotheses, but would provide no basis for determining the circumstances under which SIP hypotheses will hold.

Research in search of the boundaries and conditions of the SIP model has focused on situational ambiguity and individual differences in susceptibility to direct influence from others. Task experience or ability (as indicants of ambiguity), field dependence, locus of control, self-esteem, and individual needs associated with one’s work or work environment (i.e., achievement, affiliation, dominance, autonomy, privacy, independence) have been the individual difference factors used to test when SIP model predictions will hold.

There appears to be support for field dependence and task experience

---

1 Rakestraw and Weiss (1981) proposed that social learning processes mediated the effects of social information on behavior. They found support for social learning effects with task-inexperienced subjects.
effects on susceptibility to social influence. Several investigations have confirmed that field-dependent individuals or those with little or no task experience are more likely to be influenced by social information than are field-independent or task-experienced individuals (O'Connor & Barrett, 1980; Rakestraw & Weiss, 1981; Weiss & Nowicki, 1981; Weiss & Shaw, 1979; Vance & Biddle, 1985). People with an internal locus of control also may be more susceptible to social influence than those with an external locus of control; however, support for this finding is based on a single investigation (Blau, 1985a). Self-esteem and individual needs have not received support as factors affecting susceptibility to influence from others. Overall, then, research testing the SIP model's boundaries has confirmed the constraints on social information effects from situational ambiguity or novelty discussed by Salancik and Pfeffer (1978) and has highlighted individual difference variables moderating social information effects.

Conditions investigated under which the model component relationships may vary have included source competence and credibility (Blau, 1985a; Park et al., 1987; Weiss & Nowicki, 1981), number of sources available (Thomas, 1986), and frame of reference (including prior job attitudes; O'Reilly et al., 1980). Results generally suggest that information is not likely to be used in the formation of job attitudes when the sources are considered incompetent or unbelievable. An important, but as yet unaddressed, issue is what information an individual relies upon when the situation is novel or ambiguous and the sources are not credible. Perhaps the source's information is still used, but first is discounted or adjusted for perceived competence or credibility. Or, perhaps the individual simply makes an educated guess generalizing from past experiences in other situations.

Propositions and Empirical Indicators

The propositions given by Salancik and Pfeffer (1978) about how the model operates are in the form of post-hoc explanations of research conducted on (a) insufficient justification for behavior, (b) intrinsic and extrinsic motivation, (c) context effects on job attitudes, and (d) organizational climate. Yet, as noted by Salancik and Pfeffer (1978), the empirical studies they offer in support of the model's operation have little to do with the major components of the model (see p. 234) or only "come close" (p. 239) in their support. In regard to empirical indicators, Salancik and Pfeffer (1978) provided minimal conceptual definitions. Operational definitions of SIP concepts such as "socially constructed reality processes," "social information," "job characteristics," "task environment characteristics," or "saliency," among others, were left to empirical investigations of the model.
Because none of the investigations reviewed has challenged the basic propositions of the SIP model, we conclude that research on the SIP model has accepted the model's propositions as given. Research has provided empirical indicators for two components: social information, and job and task environment characteristics. Social information has been operationalized most frequently as statements made by others. Other indices have included group membership (Pfeffer, 1980), the presence of others (Ferris et al., 1985), group norms (Oldham & Miller, 1979; O'Reilly & Caldwell, 1985; O'Reilly et al., 1980), observation of others' behavior (Mitchell et al., 1985; Rakestraw & Weiss, 1981; Weiss & Nowicki, 1981), and position in a communication network (Dean & Brass, 1985; Pfeffer, 1980). The proposed interactions between social information and task attitudes have been supported for each of these operational definitions of social information. The findings confirm Salancik and Pfeffer's (1978) proposition that social information is a broad concept representing a variety of potential sources.

Job and task environment characteristics typically have been operationalized as task complexity measured by the JDS or the JCI. Perceived or objective measures of one's physical surroundings have been used as alternative indicators of this component (Miller & Monge, 1985; Zalesny & Farace, 1986). Again, the research has supported the covariation between perceptions and attitudes suggested by the model using these empirical indicators.

Whereas social information has numerous and varied operational definitions, job and task environment characteristics does not. The inclusion of different job characteristics (Campion & Thayer, 1985; Stone & Gueutal, 1985) and different measures of job and environment characteristics (Aldag, Bart, & Brief, 1981; Roberts & Glick, 1981) would help delineate the boundaries of the SIP model with respect to this component. For example, it is an empirical question how other job characteristics, such as the actual skills required to complete the work, the equipment used, the physical and mental demands of the job, and the actual time required to complete the job, are used in job attitude formation when this information is available along with more subjective perceptions (e.g., perceived skill variety).

Although they are the central focus of the SIP model, job attitudes have received little research attention. Because job attitudes are used most frequently as dependent variables, their role as independent variables affecting behavior generally has been ignored. In addition, SIP research has implicitly conceptualized and presented attitudes as easily developed and changeable affect constructs. While this conceptualization may hold for relatively weak attitudes, such as satisfaction resulting from performance on a 1-h task, it may not generalize to more strongly held and personally relevant attitudes (e.g., satisfaction on an actual job).
Hypotheses

Finally, whereas Salancik and Pfeffer (1978) believe that a "substantial research agenda" (p. 241) is suggested by their model, they left for future investigations the task of generating testable hypotheses. As noted in our review, SIP research has tested hypotheses about the existence of some model linkages. The research has ignored some linkages and has failed to investigate the causal relationships implied by the linkages and the underlying processes assumed to operate.

SUMMARY

It is clear that Salancik and Pfeffer did indeed stimulate thinking and research on the relevance of the social environment to job attitudes. However, the empirical research stimulated by the model has largely failed in three major areas. First, it has added little to our understanding of underlying processes involved in social information processing and job attitude formation. Second, it has minimized the importance of job attitude development and change and the relationship of job attitudes to perceptions and behavior. Third, the narrow focus of the research has imposed unnecessary boundaries on the conditions under which social information is expected to affect perceptions, attitudes, and behaviors. The following section discusses these three issues and proposes revisions to the SIP model that can guide future research efforts.

DISCUSSION

We propose revisions of the SIP model in three areas. First, a revised model must include greater explication of the mediating processes by which social information affects perceptions, attitudes, and behavior. Second, because of the SIP model's focus on job attitudes, a revised model must also take into account the recent advances in social psychological research and thought on attitude development and attitude change. Third, to further develop the SIP model as a theoretical model, issues of experience over time and subsequent attitude change must be incorporated into a theoretical model.

Processes which Mediate Model Linkages

Two concerns were noted in our review of the SIP model and the empirical research on the model. First, Salancik and Pfeffer omitted from their description of the SIP model the nature of the processes mediating social information and behavior (i.e., Fig. 1, linkage B1). Based on substantial research indicating that information sources, such as behavioral models, do influence behavior (Bandura, 1977), Rakestraw and Weiss (1981) proposed and found support for social learning as a probable me-
diating process between social information and behavior. Attitude development and change research also suggests that attitudes formed on the basis of inferences or attributions made from actual experiences should be strong (e.g., resistant to change) and predictive of future behavior (Bandura, 1977; Fazio & Zanna, 1981; Zanna & Fazio, 1982). In addition to attribution processes linking behavior to attitudes, the SIP model, therefore, should explicitly include social learning as a mediating process between social information and behavior.

Second, empirical research has ignored social reality construction processes and focused instead on showing the existence or strength of the association between social information and perceptions and attitudes. This inattention to social reality construction processes and their effects on perceptions and attitudes may arise from the lack of specification of what these processes actually are. Although they have been discussed extensively (see, for example, Weick, 1979), social reality construction processes remain relatively ambiguous and operationally undefined processes by which people are presumed to come to perceive their world. Consequently, an important assumption of the SIP model regarding the functioning of social reality construction processes remains untested.

The ultimate source of social information may indeed be a socially constructed reality. However, there are other processes that can explain more directly how social information affects perceptions and attitudes. These better understood and researched cognitive processes of encoding and judgment are proposed as mediating the effects of social information on perceptions and attitudes. Regardless of whether people are actively involved in creating their reality or are recipients of a reality created by others, it is how they perceive (i.e., encode and evaluate) that reality which has consequences for their reactions to it.

In a recent review of the social judgment literature, Hastie and Park (1986) identified three categories of information processing models based on assumed relationships between memory (i.e., an outcome of encoding) and judgment (i.e., evaluation). The first category represents theories and models that assume that memory and judgment are not causally related, but rather operate independently of each other. Anderson's (1981) information integration model is an example of this category. A second category of models, exemplified by Tversky and Kahneman's (1973) availability model of judgment, proposes that memory affects judgment. According to this memory-based processing perspective, information about

---

2 Blau and Katerberg (1982) suggested Anderson's information integration theory to explain how current information and prior perceptions were integrated into job attitudes (i.e., the first category of social judgment models).
any object is encoded into working memory as it is received and then transferred into long-term memory storage. At a later time, when a judgment is requested, the memory is retrieved for input into the judgment process. The judgment that follows is a direct result of the retrieved information. Any processes affecting the encoding and retrieval of the information will affect the resultant judgment.

The third category of models suggests that judgment influences memory. Although these on-line processing models agree on the causal direction of the relationship between memory and judgment, they vary in their beliefs of when judgment influences memory. That is, "biased-encoding" models propose that judgment biases what information is encoded into memory, and "biased-retrieval" models propose that judgment does not affect encoding but rather biases what information is retrieved from memory. Recent research suggests that when evaluation is the objective of information processing, evaluation will occur as the information is encountered (i.e., processing will be on-line). When evaluation is not a goal, the processing will be memory-based (Foti & Lord, 1987; Lichtenstein & Srull, 1987).

In their review of the social judgment research, Hastie and Park (1986) conclude that true memory-based judgments may be rare in both the real world and the laboratory as people make many on-line judgments spontaneously. True memory-based judgment requires considerably more cognitive effort than on-line judgments. Moreover, individuals appear reluctant to search long-term memory for information when new judgments are made and prefer to rely on earlier judgments (Lingle, Dukerich, & Ostrom, 1983). True memory-based judgments, therefore, may be limited to those situations for which an individual has not made a previous judgment and for which there is sufficient motivation to search long-term memory for relevant information. Based on Hastie and Park's (1986) review, participants in most SIP studies should have made on-line judgments about the tasks they performed.

The SIP model incorporates memory-based processing judgment models in the causal links from social information to job perceptions and from job perceptions to job attitudes (i.e., memory → judgment or P1 → P2 linkage). It also includes on-line processing in the linkage between social information and job attitudes. However, the SIP model specifies only one of the two causal linkages necessary to represent this category of social judgment (i.e., A1 linkage). We propose the addition of the second linkage to show the influence of attitudes on perceptions. The judgment → memory models (i.e., on-line processing) are supported by considerable research from the social judgment and attitude literatures (Adler, Skov, & Salvemini, 1985; Caldwell & O'Reilly, 1982; Leamer, 1974, 1975; Snyder & Uranowitz, 1978; Weiner, 1985; Winter & Uleman, 1984). This re-
search also suggests that social information is more likely to influence attitudes directly and perceptions indirectly (i.e., $A_1 \rightarrow \text{perceptions}$) than it is to influence perceptions directly and attitudes indirectly (i.e., $P_1 \rightarrow P_2$).

In conclusion, we have proposed that encoding and judgment processes mediate the relationships among social influence, task perceptions, and attitudes and that on-line attitude formation is more likely than the more cognitively effortful memory-based attitude formation. Recent research also suggests that the influence of social information on attitude development and change is a direct function of the depth of processing that occurs when social information is presented.

**Depth of processing.** The persuasive communication, person perception, and social judgment literatures have identified two broad categories of information processing models. One category encompasses deliberate and systematic cognitive manipulation of information and has been variously labeled as detailed, systematic, controlled, mindful, in-depth, analytic, and central processing models (Beach & Mitchell, 1978; Craik & Lockhart, 1972; Feldman, 1981; Petty & Cacioppo, 1986). Theories in this group assume that people at times expend cognitive effort to evaluate information and to integrate it with prior information in forming an attitude or judgment.

Systematic processing may highlight for careful consideration certain job or environment characteristics in ideas and arguments contained in social information. For example, a worker might read and determine the merits of the arguments presented in a union newsletter stating that workers have little control over how they complete their work. If asked about the job later, the worker might comment on the amount of control experienced rather than comment on pay or working conditions. Control over work, however, may be thought about in relationship to a recently negotiated collective bargaining agreement, the union's inability to affect management–nonmanagement relationships in the organization, or some other factor.

The second category of information processing models proposes that often much less cognitive effort is expended in the development and expression of attitudes and judgments. This is obvious in the labels that are used to describe these models, e.g., automatic, shallow, heuristic, mindless, effortless, schema-driven, unanalytic, and peripheral (Chaiken, 1986; Feldman, 1981; Petty & Cacioppo, 1986; Schneider & Shriffin, 1977; Taylor & Crocker, 1981). Typical of these minimalist processing models is Chaiken's (1986) heuristic model of persuasion in which persuasive cues or simple decision rules, rather than analysis of information content, are hypothesized as the means by which people often arrive at their attitudes or evaluations. Contextual cues surrounding the commu-
nication of information are seen as indirectly affecting an attitude or evaluation by directly influencing attention to and interpretation and acceptance of the information.

An example of a simple decision rule would be a worker reading the same union article and accepting the union's position because the union is always right. If asked about the work later, the worker might comment on the lack of control experienced on the job. Although attention would be focused on control in the job as in the above example, the treatment of the issue would likely be less extensive than if the information was processed systematically. Moreover, a stable attitude about personal control in the job and attitude-consistent behavior would be much more likely for the worker who processed the information systematically than automatically (Fazio, 1986; Petty & Cacioppo, 1986).

The importance for the SIP model of level of processing differences lies in the products of the processing. Although the same reported perceptions or attitudes may result from either level of processing, their effects on behavior and subsequent information processing are likely to be quite different.

**Determinants of depth of processing.** Recently, research in the social cognition and attitude change literatures has begun to map conditions under which information will be processed systematically or automatically and the consequences for resultant perceptions, attitudes, and behaviors (Feldman, 1981; Schneider & Shrieffin, 1977). The elaboration likelihood model (ELM) of persuasion is a comprehensive model developed to account for the differential effects of persuasive communications on the extent of information processing and on attitude development and change (Petty & Cacioppo, 1986). Although the thrust of the ELM model and its research agenda have been narrowly construed (i.e., subjects expecting to receive a persuasive communication), it has relevance for social information processing in organizational contexts.

The ELM model proposes three critical individual difference and four critical situational factors that are relevant to understanding the relation of the depth of social information processing to the strength of perceptions and attitudes. The individual difference factors are the motivation to engage in effortful processing of information, the ability to engage in effortful processing, and the predisposition to engage in such processing (Petty & Cacioppo, 1986).

According to the ELM perspective, social information will be carefully scrutinized during attitude formation or change when the motivation for systematic information processing is high. A key characteristic affecting the motivation to systematically process information is the degree to which the object of the information has personal meaning or relevance for the individual. For example, a major change in one's physical work en-
vironment (e.g., a move to an open office design) will have high personal relevance for those affected by the change. When personal relevance is high, the individual will relate any incoming information with job-relevant information (i.e., beliefs and affect) previously stored in memory. Any resulting job attitudes should show temporal persistence, resistance to change, and be predictive of behavior. When personal relevance is low, the resulting job attitude will reflect peripheral (i.e., non-content) cues in the information source (e.g., expertise), message (e.g., length), or context (e.g., on or off company time), should be susceptible to change, and should not predict job behavior.

Ability to process information refers to the extent to which a person possesses the skills or resources required for cognitive processing. For example, prior knowledge, such as that gained with job experience, may be needed to understand and use information presented about a task. Ironically, it may be the inability of inexperienced workers to process some highly relevant job information that may cause them to rely on peripheral rather than on content cues (from competent sources) as the basis for the attitudes they express.

Individuals also vary in their predispositions toward engaging in effortful thinking. Individuals with a strong predisposition for effortful thinking are likely to process the message contained in social information rather than be affected by the peripheral cues surrounding the message because the processing itself is satisfying to them. For example, new employees predisposed toward effortful thought may seek out more people for information regarding the climate of the organization than those not so predisposed.

Situational determinants of depth of processing include the ease with which information can be processed, the saliency of the information, the individual's accountability in the situation, and information source characteristics. Research in information processing, memory, and recall suggests that the ease or difficulty of processing partly determines the extent of influence of the content and context of a communication (Petty & Cacioppo, 1986). Difficulty or inability to receive the content of a social communication may prevent systematic processing from occurring. The content of a supervisor's lengthy monologue may be minimally encoded by its recipients while a written statement of the same information or a shorter oral version would be more likely to be processed in depth.

Highly salient or vivid contextual cues can overwhelm communication content and interfere with systematic processing or give rise to automatic processing (Fiske, Kenny, & Taylor, 1982; Kahneman, 1973). The use of priming cues to direct attention to selected aspects of a stimulus is another example of the effects of stimulus saliency on information processing. For example, a co-worker who complains to another worker about a
supervisor's lack of organization may influence the other worker to ascribe lack of organization as an explanation for other supervisor behaviors.

Accountability is the degree of personal responsibility for task outcomes or accomplishment. The motivational properties of accountability for cognitive processing can be seen in the model of decision-making strategy choices discussed by Beach and Mitchell (1978) and in research findings on social loafing (i.e., the tendency to decrease individual effort on group tasks; see, for example, Latane, Williams, & Hawkins, 1979). The greater the perceived accountability for a task or situation, the greater the likelihood that any task information (including social information about a task) will be systematically processed.

Finally, the influence of the source of a social communication has long been identified with greater acceptance and believability of a communication (Fisher, Ilgen, & Hoyer, 1979; Hovland et al., 1953; Zimbardo, Ebbesen, & Maslach, 1977). Perceived expertise, status, attractiveness, and trustworthiness, for example, can be highly salient contextual cues which may reduce the extent to which the content of a communication is systematically processed (Chaiken, 1986; Petty & Cacioppo, 1986). Several of the SIP investigations reviewed provide additional support for information source effects.

**Mediating Processes in a Revised SIP Model**

The proposed revisions of the SIP model regarding depth of processing and mediating processes between (a) social information and task perceptions, (b) social information and job attitudes, (c) social information and behavior, and (d) task perceptions and job attitudes are shown in Fig. 2. Propositions from the ELM model of persuasive communication describe the personal and situational factors that determine whether perceptions and attitudes are the result of shallow or in-depth processing. These are shown in Fig. 2 as intervening variables influencing how social information affects task perceptions and job attitudes. The depth of information processing has important implications for the strength of perceptions and attitudes formed and their effects on subsequent information processing and behavior. The mediating process identified between social information and behavior follows Rakestraw and Weiss's (1981) research on social learning effects on job attitude formation. The attribution processes proposed by Salancik and Pfeffer as mediating the effect of behavior on attitudes are supported by attitude formation research suggesting that experientially derived attitudes, i.e., those derived through attributions for one's behavior, may be exceptionally strong (Zanna & Fazio, 1982). Similar to Salancik and Pfeffer, choice processes are suggested as mediating the relationship between attitudes and behaviors. We also suggest
that the retrieval of the attitudes from memory be made explicit in the model.

Considerations of various social judgment models leads us to support both memory-based (memory → judgment) and on-line (judgment → memory) explanations of the relationships between perceptions (from encoding processes) and attitudes. The importance of these processes lies in their ability to explain several component relationships and in their specification of the reciprocal influence of attitudes and perceptions.

The revised relationships presented in Fig. 2 recognize that attitudes may be the result of memory-based processing, i.e., derived from the recall of previously formed perceptions. This is presented by the link between determinants of processing and task perceptions and between task perceptions and attitudes. Attitudes also may be developed on-line, i.e., simultaneously formed as information about a job is encountered and transferred into memory as perceptions are formed. This relationship is represented by the link between determinants of processing and job attitudes (i.e., biased encoding and retrieval processes).

One implication of on-line attitude formation for our understanding of social information processing is in formally recognizing the important influence of both newly formed and existing attitudes on subsequent perceptions. Consistent with other research on attitude influences on behavior, on-line attitude formation challenges the underlying assumptions of
the SIP proposition that perceptions influence attitudes only. It also removes the presumed constraints of situational ambiguity on social information effects by specifically describing the processes by which both novel and past information and experiences affect perceptions, attitudes, and behavior.

For example, in a novel situation, the available information may be simultaneously encoded and evaluated. As the initial judgment or attitude is formed, it acts as a filter through which other information is screened. That is, the attitude influences what incoming information is attended to and encoded into memory. When the same or a similar situation is encountered again, the previously formed attitude is recalled and it acts to bias both the retrieval of relevant information from long-term memory and the selection and encoding of new information. From this perspective, initial attitudes or judgments exert considerable influence on later perceptions, behavior, and attitudes. The greater likelihood of on-line versus memory-based judgment is shown in Fig. 2 by heavier linkages.

Attitude Development and Strength

Although the SIP model discusses the processes leading to the formation of attitudes, it has generally ignored the product of these processes, i.e., the attitude itself and its effect on both perceptions and behavior. SIP research has implicitly conceptualized and presented attitudes as easily developed and changeable affect constructs. Tasks are learned, performed, and evaluated generally within a 1- to 2-h experiment. Because they are measured only once, attitudes are treated as relatively stable reflections of an individual's feelings and beliefs about a task.

Although they may be assumed to be stable and strong, the attitudes developed by participants in SIP research are likely to be weak and the result of automatic processing. However, there is no empirical evidence to address the issue of the strength of the attitudes expressed and measured in these studies; attitude strength and stability has never been measured.

Attitude strength refers to the strength of the association that has been formed between an object and its evaluation (Chaiken & Stangor, 1987). It includes such notions as centrality (i.e., degree of interconnectedness between the self and the attitude object; Krosnick, 1986), accessibility (i.e., related to the number of cognitive associations between the object and its evaluation; Fazio, 1986), and conviction (i.e., a position adopted by an individual and "possessed" as a true belief; Abelson, 1988). For example, interconnectedness between self and one's job attitude is evident in an individual's level of job involvement (Blau, 1985b; Blau & Boal, 1987). Job attitudes for high-involvement employees should be strongly associated with their self-attitudes (Lodahl & Kejner, 1965). This
association is affected by the amount and quality of the information possessed about the job (or other object), and confidence or certainty about the veracity of the association (see, for example, Raden, 1985).

Knowledge of the strength of the attitudes expressed as a result of the SIP research manipulations is important for two reasons. First, without knowledge of attitude strength, predictions about the probability of attitude-consistent behavior cannot be made with any confidence. Attitude theorists (Abelson, 1981, 1988; Ajzen, 1982; Fazio, 1986; Fazio, Chen, McDonel, & Sherman, 1982; Fazio & Zanna, 1981) have suggested that attitude organization and strength affect the likelihood of attitude-consistent behavior. Strong attitudes are likely to be evidenced in behavior whereas weak attitudes are not. Related to job involvement, employees with high job involvement would be likely to exert a considerable amount of task-related effort (i.e., behavior would be consistent with attitudes about the job). Without strong contingencies for their job behavior, employees with low job involvement generally would not exert high job effort (Blau & Boal, 1987).

Second, attitude strength is likely to affect whether or not the attitude has influence on future processing of information about a task. Because weak attitudes are more likely to have been processed automatically, they are less likely to be recalled (Fazio, 1986; Pryor & Ostrom, 1981; Smith, 1981; Wyer, 1980) and, consequently, less likely to affect the accumulation of new information and its assimilation with past information (see Shaw, 1980, and Taylor & Fiske, 1978). For example, weak attitudes have a low probability of influencing selective attention to information about a task or work situation and are unlikely to meaningfully affect future evaluations. Weak attitudes may also be an indication of low personal relevance of the attitude object for the individual, inability to process information available about the object, or a general disinterest in effortful thinking.

Depth of processing, then, should affect the strength of attitudes formed. Strong attitudes are more likely to be stable and persistent and to affect current and subsequent perceptions and behaviors. Weak attitudes may influence perceptions and behavior at the time they are formed. However, they are less likely than strong attitudes to be encoded into long-term memory and therefore are not likely to be available at a later time for use as perceptual and behavioral guides.

A revision of the SIP model relevant to attitude development and strength is presented in Fig. 3. The model presents the interrelationships among perceptions, attitudes, and behavior under conditions in which attitudes are weak, strong, or of an interim nature. Encoding and judgment processes that occur with automatic processing are presented in Fig. 3 as leading to weak attitudes and perceptions. If a behavioral response is
required soon after attitude formation, then behavior consistent with the attitude may occur. However, as noted in Fig. 3, both the attitude and the behavior are likely to reflect a simple decision rule or heuristic (Chaiken, 1986). Because encoding of either the attitude or the behavior is unlikely, future attitudes and behavior may be unrelated to earlier ones.

Fig. 3. Mediating processes and outcomes of systematic and automatic information processing.

Encoding and judgment that occur with the systematic processing of the content of credible information are presented as resulting in strong attitudes and perceptions. Strong attitudes and perceptions should lead to behavioral responses that are consistent with attitudes and perceptions over time and across situations. However, if the only information available comes from contextual cues or from a source of questionable credibility or is insufficient or inconsistent with other information, then interim perceptions and attitudes may be formed and stored in long-term memory. This information may be tagged in memory as being based on questionable or inconsistent information (Hastie, 1984; Hastie & Park, 1986) and reevaluated when additional and more credible information is available (i.e., through encoding (P1) and judgment (A1) processes). Reevaluation of the interim perceptions and attitudes and their integration with new information could eventually lead to strong perceptions and attitudes and behavioral responses consistent with both. The strongest evidence exists for the processes identified when strong attitudes and perceptions are developed. Although identical processes or variations of them may also occur in the formation of weak or interim attitudes and perceptions, there is insufficient research evidence as their exact nature. Therefore, whereas we are confident in labeling the processes leading to strong attitudes and perceptions, we are less confident specifying the processes occurring in weak and interim attitude development.
Time and Attitude Change

SIP research has overlooked time and the accumulation of information from personal experience, observation, and communication with others on perceptions, attitudes, and behavior. In a majority of the SIP studies conducted, relevant task experience in the situational context has been low. Indeed, the intent of these studies was to minimize possible prior experience with the task. Where task experience has been varied, social cues show differential effects (e.g., Vance & Biddle, 1985).3

We believe the SIP model has situational generalizability and is not limited to situations characterized by novelty, ambiguity, or minimal personal experience. For example, people will look to others for information even when they are highly knowledgeable or experienced (e.g., to verify or compare their perceptions and attitudes with those of others). However, time should affect the extent of social information processing in at least two ways. First, it seems reasonable to believe that social influence will affect attitudes, perceptions, and behavior differently the first time an individual has experience with an event or object, such as a job, than the second, or third, or hundredth time. Second, the time available for a response is likely to influence the level of information processing that occurs. Situations requiring an immediate response will constrain the extent to which systematic processing can be pursued, regardless of one’s predisposition to do so. Situations allowing extended time for a response will also allow for individual differences in processing preferences to emerge. Landy and Becker (1987) have argued similarly for a consideration of time in motivational approaches.

Salancik and Pfeffer incorporated time and experience in their link from behavior to social reality construction processes. This solitary link limits feedback to behavioral experiences. Clearly, the attitude development and change and the social judgment and memory literatures provide ample evidence that perceptual and evaluative information retrieved from memory has considerable impact on the processing of new information. Figure 4 depicts the revised model showing the determinants of depth of information processing, the types of processing (encoding and judgment) through which social information may affect perceptions and attitudes, and the results of both types of processing on attitudes, perceptions, and behavior. We propose that time and attitude change can be better accounted for by incorporating (1) the recall of previously formed strong attitudes and perceptions, (2) the integration of previously formed atti-

3 It is surprising that in field and simulation studies where it is likely that past experience with a task would vary across individuals, experience has not been systematically examined as a potential moderating variable (see Zalesny & Farace, 1986, for an exception).
FIG. 4. Revised model of social information processing.

Figures 4. Revised model of social information processing.

Figure 4 incorporates the revisions suggested in the presentation of mediating process linkages (i.e., Fig. 2) and attitude strength (i.e., Fig. 3). These revisions include the following:

(a) A distinction between the temporary nature of perceptions, attitudes, and behaviors which result from automatic processing of contextual cues and the enduring nature of perceptions, attitudes, and behaviors which result from the systematic processing of information content.

(b) The role and functioning of interim perceptions and attitudes in the development of strong perceptions and attitudes that are predictive of future behavior.

(c) The relatively greater influence of attitudes on perceptions than of perceptions on attitudes (i.e., preference for on-line versus memory-based processing).

Figure 4 also describes linkages to social information that acknowledge the functioning of behavior and of attitudes and perceptions in affecting perceptions and evaluations of future reality. These linkages include the enactment processes proposed by Salancik and Pfeffer by which a per-
son's own behavior influences his or her environment (e.g., through the reaction of others). Clearly, behavior which has become routinized into a script or schema also will affect one's social environment. Consequently, in addition to Salancik and Pfeffer's proposed feedback of behavior to social information, we have made explicit a feedback linkage to social information (through enactment processes) from scripted behavior.

Strong perceptions and attitudes are also subject to reevaluation and modification on the basis of new information. These adjustments are represented in Fig. 4 by mediating process linkages through which new social information can be integrated with previously formed perceptions and attitudes.

Automatic and systematic processing are not independent of each other. As indicated in Fig. 4, behaviors that are the result of automatic processing may eventually lead to strong attitudes and perceptions if they have been encoded into long-term memory. The recall of these earlier behaviors may initiate attribution processes that result in the formation of strong attitudes. This process is presented as the encoding linkage between behaviors from automatic processing and attribution processes. The interrelationships between automatic and systematic processing are also evident in the routinization of perceptions, attitudes, and behaviors into behavioral scripts (automatic processing) that may be modified by future information (systematic processing).

**Research Applications from the Revised Model**

Our critique of the SIP model noted the absence of a research agenda to guide testing of the model. We also identified several SIP model linkages or paths that have received considerable research attention and others that have not. In the following sections, we outline a research agenda for the suggested revisions of the SIP model that specifies where we believe future SIP research efforts should be focused.

**Depth of processing issues.** Although SIP research has begun to investigate the model's boundaries and the conditions under which the model's propositions will hold, the research issues have been narrowly construed as individual needs, task experience, and source characteristics. The determinants of depth of information processing drawn from the attitude change and persuasive communication literatures suggest several new personal and situational factors for future research.

Current thought on self-perceptions of efficacy suggests that evaluations of perceived capability affect motivation and behavior (Bandura, 1977, 1982). While actual ability and task experience should continue to be examined for their moderating influences, perceived ability (e.g., self-efficacy) should also be considered as a likely determinant of the depth at which social information is processed. It may be difficult to manipulate
personal relevance of a task or job in most SIP research designs. However, given the potential importance of this variable in influencing the depth at which social information about the task or job is processed, task/job relevance should be measured in future SIP investigations. Although Weiss and Nowicki (1981) proposed task relevance as an explanation for their unexpected findings, this variable has not been measured in any subsequent SIP research.

Predisposition for automatic or systematic processing can be assessed using a scale developed by Petty and Cacioppo (1986). Their need for cognition scale appears to be a reliable and valid measure of information processing preference. Personal accountability could be manipulated in laboratory experiments by identifying each participant’s work and by linking individual and group rewards to individual performance. In a field study, personal accountability could be determined through a job description or through self-reported perceived accountability and supervisor-reported actual accountability for any job.

Ease of processing could be operationalized in at least two ways. The first would be through the choice of information channel for transmitting social information. A complex message could be presented in both oral and written form, providing the conditions for difficult and easy processing. A second operationalization would be the likelihood of understanding (comprehension) of the message by the recipient. For example, inexperienced or new organizational members (or laboratory study participants) may not comprehend technical language or jargon contained in a social communication and may disregard the entire communication. Distractions (e.g., noise, a busy environment, stress) may also interfere with message receipt, comprehension, and acceptance.

A related issue is information salience. Although most SIP laboratory experiments have manipulated information salience through either priming of control or other stimuli, field investigations have neither controlled nor measured salience. Thought listing or protocol analysis describing cognitive input and processing could provide the necessary information for understanding the role of information salience in affecting the depth at which social information is processed.

Typically, SIP investigations have operationalized source characteristics affecting susceptibility to social influence as source competence or credibility. Future research must look to other source factors to examine the scope of this determinant of depth of information processing. Some source factors may create additional sources of social information for a particular situation, thereby compounding the original source’s influence. An example might be a structuring supervisory style toward employees that results in a positive or negative response to the supervisor from the
work group and that also precipitates the formation of work group norms that either endorse or sabotage social communications from the supervisor.

Finally, time available to make an evaluative response in an SIP study should be manipulated (through time constraints) and/or measured (through self-report or observation). The task attitudes obtained near the end of an experimental session or in a group-administered field survey may have situationally and individually imposed time constraints on systematic or memory-based processing. Whether time constraints actually affect the strength and stability of perceptions and attitudes, however, is an empirical question needing research.

Of the personal and situational factors identified as determinants of depth of information processing, personal relevance of the task or situation appears to be the most important and the most likely to moderate the effects of the other determinants of depth of processing. We suggest that this factor be included in all future SIP studies. One specific hypothesis that could be tested would predict that when the personal relevance of the job or work environment is high, social information about the job or environment will lead to attitudes that are more persistent temporally, more resistant to change, and more predictive of behavior on the job than when personal relevance of the job or work environment is low. Measurement of personal relevance should include the meaningfulness of the job and its outcomes to individuals.

Encoding and judgment processing. As information processing is most often on-line, the relevant research in this area should be directed at identifying the conditions under which processing will be memory-based and the implications for attitudes, perceptions, and behavior of each type of processing. Because participants in laboratory experiments probably anticipate that evaluation of some aspect of the experiment will be requested (Hastie & Park, 1986), they will be difficult to surprise with an unexpected task evaluation and should engage in on-line processing from the start of the experiment. Tasks used in SIP experiments, then, should prevent on-line evaluation from occurring or, at least, make it very difficult for on-line processing to occur (e.g., using tasks that require considerable cognitive effort).

Assessments of extent of encoding and extensiveness of memory search for previously encoded information could be accomplished through immediate and delayed recall of task characteristics or social information for both memory-based and on-line manipulations. Completeness and accuracy of recall could then be related to attitude strength, task relevance, and attitude–behavior consistency over time. For example, we would expect that, in general, the strength of the effect of specific social information on job attitudes and perceptions would be a function of the
time between the receipt of the information and the measurement of job attitudes and perceptions.

*Attitude strength and stability measurement.* We noted that SIP research has assumed, but not empirically verified, that the attitudes formed by participants in both laboratory and field experiments have been strong and stable. Clearly, future research must explicitly measure attitude strength and stability and their relationships to behavior. Measurement of attitude stability requires multiple attitude assessments over a period of time (e.g., one week after the experimental manipulation in a lab study, one or several months after the manipulation in a field study). Measures of attitude strength could include (a) a person's ability to recall the information presented about the task (e.g., the social cue manipulation), (b) self-reported confidence in the accuracy of the task evaluation compared with perceived accuracy of others, (c) the variance of responses to items tapping similar aspects of task evaluation (the smaller the variance, the stronger the evaluation), or (d) attitude–behavior consistency over time and across situations. Because the retrieval process occurring when multiple attitude measurements are taken may itself strengthen the attitude being recalled, the time period between measurements must be varied within experimental groups.

*Time and attitude change.* Evident in each of our recommendations for future research has been the need to include time as a critical factor affecting the strength and direction of influence on attitudes of social information. Our revisions to the SIP model suggest that systematic processing of social information should lead to strong attitudes and attitude-consistent behavior regardless of the pathway by which social information travels. Over time, attitude-consistent behaviors should facilitate the development of behavioral scripts that will be activated when key discriminating aspects of a situation are recognized. As the situation-discriminating process also becomes routinized, the attitude–behavior script sequence can be activated through automatic processing.

Critical issues concerning social information processing effects over time include investigation of the development of routinization of behavioral scripts. Of particular interest is examining these scripts to uncover what aspects of the original social information are retained intact and what aspects are transformed in the encoding and evaluation processes involved in attitude formation. If the behavioral script bears no relationship to the original social information, then the impact of initial perceptions and evaluations on behavior may be less important in the long run that previously believed. A second time-related issue concerns the conditions that will precipitate a reexamination and potential modification of a behavioral script. Social judgment literature suggests that information inconsistent with previously processed information is likely to receive
greater attention than consistent information (Hastie & Park, 1986). Research is needed to examine the extent and nature of the inconsistent information needed for a change in behavioral scripts to occur. We expect that information inconsistent with a behavioral script will be attended to and processed when a substantial change occurs in the job or work environment (e.g., job redesign or change in supervisory style).

CONCLUSION

The SIP model appears deceptively simple. However, it embodies complex social and cognitive processes that impact the formation of attitudes and beliefs and the behavioral choices that people make in response to their social situations. In this discussion we have integrated ideas and research findings from the SIP, social judgment, cognition, attitude change, and persuasive communication literatures that can help in explicating various aspects of the SIP model that have been underresearched and underexplained. We believe that future research on the SIP model or any model of information processing in a social context must be less myopic and open to direction from other areas of behavioral research.

REFERENCES


Hastie, R., & Park, B. (1986). The relationship between memory and judgment depends on whether the judgment task is memory-based or on-line. Psychological Review, 93, 258–268.


Lichtenstein, M., & Srull, T. K. (1987). Processing objectives as a determinant of the


Vance, R. J., & Biddle, T. F. (1985). Task experience and social cues: Interactive effects on

Received: April 5, 1988