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ABSTRACT

Three studies were conducted to examine factors which affect lay observers' judgments about peers who express illness compl..nts. In the first study, brief scenarios describing a hypothetical patient suffering from a sore throat were presented to 118 college students. The results revealed that subjects were less likely to regard the patient's sore throat as legitimate when there was negative evidence of an infection, when his college workload was heavy, and when his love-life was unhappy. Even when subjects knew the patient's symptom had an organic cause (Positive Infection evidence), they regarded the symptom as less legitimate when it was compounded with psychological or social stress. Impressions of the patient and treatment recommendations were also analyzed. In an attempt to replicate the pattern found in the Positive Infection groups, a follow-up study was conducted in which scenarios were modified. The results showed the pattern of legitimacy ratings to be quite similar to the pattern in the original study. A third study aimed to present patient information in a richer and more realistic format than the scenario approach. Preliminary analyses suggest that subjects picked up on manipulations of infection evidence, workload, and love-life, and that these influenced their legitimacy ratings, treatment recommendations, and impressions much as in the original study. The issue of diagnostic test credibility was also examined in the third study. (NB)

LEGITIMATING "SECOND-HAND" SYMPTOMS:

OBSERVER JUDGMENTS OF ILLNESS VICTIMS

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LEGITIMATING "SECOND-HAND" SYMPTOMS:

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Social psychologists whose interests lie in the area of health have made great strides in increasing our knowledge of how lay people conceptualize and achieve understanding of their own health status. Only recently, however, have we begun to examine how these same laypersons conceive of other people's health status. It is widely recognized that illness -- as distinguished from disease -- is essentially a matter of social construction and validation (DiMatteo & Friedman, 1982). But the focus of the illness-as-construct metaphor has been upon how medical personnel, not lay members of patients' social networks, provide the validation for patients' complaints. To redress the imbalance, my students and I have been investigating factors which affect lay observers' judgments about peers who express illness complaints.

A coinage which we've found useful is that of **second-hand symptoms**, that is, symptoms which a patient reports to observers. From an observers' standpoint, such data are 'second-hand' in that they refer to private experiences of the patient, to which the observer has no direct access. Everyday examples of second-hand symptoms abound:

> A friend, a spouse, or a child complains about the headache he or she is experiencing. A student requests an extended deadline for a term paper, citing a sore throat and other symptoms which have interfered with his or her studies. An employee describes to a supervisor the back pains which have plagued the employee for months.

In each case, observers are presented with a report of a sufferer's symptoms and, either explicitly or implicitly, must make certain judgments based upon this information. These may revolve around the question, How seriously should I take the sufferer's complaint? Or, the observer may ask, What treatment is appropriate? More general questions may also be provoked, for example, What sort of person is the victim? Observers' answers to such questions will often have functional significance for the victim.

The Biomedical Model, Signs, and Symptoms

The lay observer does not begin the process of assessing second-hand symptoms as a tabula rasa. Each of us is socialized to accept the model of illness and disease processes which is predominant for our culture. In the West, this model is pre-eminently a biomedical one, despite recent advances in the articulation of biopsychosocial and holistic models. The basic assumption of the biomedical model is that all diseases have organic causes which manifest as physical signs (Engel, 1977). Symptoms -- sequelae of the disease process which enter the patient's consciousness and are available to any casual observer -- are only surface manifestations of the process. The medical diagnostician's task is to identify the signs of disease, using the patient's reports of symptoms as a starting point (Wulff, 1976).

At a formal level, the biomedical model is noncontroversial. It postulates rules for relating signs and symtoms, and it has an impressive technology for identifying the signs which give rise to symptom reports. But at another level, there is a potentially serious problem, viz., how do we make sense of symptoms which occur without obvious signs? One possibility is to ask whether something has been overlooked in the search for signs. Another is to disbelieve the symptoms. As we shall show here, there seems to

be a bias to adopt the latter of the two alternatives: To assume that the problem lies with the patient who reports the symptoms, rather than with the technology of identifying physical signs. Indeed, there is abundant evidence that medical staff disbelieve patient reports of pain which occur in the absence of known physical signs (Burgess, 1980; Taylor, Skelton, & Butcher, 1984). Is the same true for lay observers? We believe the answer is, Yes.

Psychogenic Explanations for Sign-less Symptoms

The behavioral sciences have provided for the biomedical model at least two ways in which to rationalize sign-less symptoms without calling biomedical technology and diagnostic practice into question. The first is the idea that symptoms may be displaced expressions of psychological distress. Symptoms are thus labeled as "hysterical" or "hypochondriacal", and patient actions labeled as "abnormal illness behavior" (e.g., Pilowsky, 1969). Then, there is the concept of "secondary gain" for occupying the sick role (Mechanic, 1978; Shontz, 1975). It would be fatuous to deny that patients may misattribute symptoms to nonexistent diseases, or that some proportion of patients are malingerers. Certainly, symptoms can be psychogenic in origin. But we believe that the mere availability of psychogenic explanations for patient symptoms biases observers' evaluations.

In the past 15 months, we have conducted three studies, all of which converge on the following conclusion: When observers encounter second-hand symptoms which are compounded with psychological or social distress, they discount the symptoms and form relatively negative impressions of the patient. Moreover, this occurs even when there is explicit evidence that the symptom complaint has a physical cause.

EXPERIMENT 1

Method

Our first venture was a modest experiment using an admittedly impoverished methodology. We constructed very short scenarios describing a hypothetical patient suffering from a sore throat. We shall refer to the patient as "he" because the overwhelming majority of our subjects attributed male gender to the patient, despite our omitting all gender references from our descriptions of him. Because our participants were all college students, our patient was portrayed as a college student.

We systematically varied three factors in the descriptions. First, we stated that the patient did or did not have a heavy load of coursework at college. Second, we stated that he was experiencing a satifactory or a distressed love-life. Finally, we stated that medical examination and testing had or had not revealed signs that the sore throat was caused by an infection. It's very important to note that we did not state that he had no infection; we said, instead that there was no evidence of an infection. The precise phrasing used in the scenarios is shown in Figure 1.

Our design was a 2x2x2 experiment with a total of 118 subjects. After reading one of the eight scenarios, subjects made a series of ratings concerning how legitimate they viewed his symptom complaint, what treatment they would recommend for him, and their impressions of him as a person.

Results and Discussion

Legitimacy. Subjects rated how painful and serious they thought the sore throat was. They also rated how much they thought the symptom complaint was "all in the patient's mind" and "just an excuse" to avoid his course obligations. These four ratings formed a unifactorial, internally consistent

scale. The mean ratings of legitimacy are shown in Figure 2. There are two noteworthy features of the data. First, all three factors affected our subjects' ratings. They were less likely to regard the patient's sore throat as legitimate when there was negative evidence of an infection, when his college workload was described as heavy, and when his love-life was unhappy. Of the three factors, Love-Life was only marginally significant ($p = .08$); the Infection and Workload effects were highly significant. In contemplating the difference between the Positive and Negative Infection groups, recall that we did not state that the patient had no infection, merely that the evidence was negative.

Second, when we examine the four groups in which there was positive infection evidence (the solid lines in Figure 2), we see that legitimacy ratings decreased as information indicating a heavy workload or an unhappy love-life was added to the descriptions. So, even when subjects knew the patient's symptom had an organic cause, they regarded the symptom as less legitimate when it was compounded with psychological or social stress.

Follow-Up Treatment. Our subjects also rated how likely it is that they would recommend various treatments for the patient. Most important for present purposes is that, given the option to refer the patient to a local hospital for follow-up testing, subjects in the Negative Infection groups did not differ from those in the Positive Infection groups; they were slightly but not significantly less likely to recommend follow-up testing. This suggested to us that Negative Infection subjects were quite confident in the results of the test for throat infection. The problem was not the diagnostic procedure, but the patient.

Impressions of the Patient. Our interpretation was supported by results of subjects' ratings of their impressions of the patient. Eight impression

items formed a unifactorial, internally consistent scale. Means are shown in Figure 3. These are rather similar in form to the legitimacy ratings and, indeed, were moderately correlated with legitimacy ratings (r = .53). Impressions were most positive when there was Positive Infection evidence and no mention of work or romantic problems; these were least positive when evidence of an infection was negative, and the patient was experiencing both romantic and work-related problems. Even when there <u>was</u> Positive Infection evidence, impressions declined as information which implied displacement or secondary gain motives was added to the description.

FOLLOW-UP STUDIES

Discounting Symptoms with Signs

Since our initial experiment, we have conducted two follow-ups. One was aimed at replicating the pattern found in the Positive Infection groups of the original study. We modified the scenarios so that these uniformly indicated positive signs of infection. We manipulated another social psychological stress factor by stating that a member of the patient's family had been recently hospitalized, or that his family was in good health. We weakened the Workload manipulation by omitting the statements that his workload was "about normal" or "very heavy"; instead, we let our 96 subjects draw their own conclusions from the objective description of the patient's upcoming assignments. Finally, we changed the placement of the legitimacy items in the rating booklets which our subjects completed; specifically, we dispersed legitimacy-related items among other items in the booklet. The wording of the revised scenario is shown in Figure 4.

As Figure 5 shows, the pattern of legitimacy ratings is quite similar to what we found in Experiment 1. Legitimacy ratings declined when the patient

had a heavy workload, when his love-life was unhappy, and to some degree when a member of his family was in ill health. Once again, subjects seemed to regard the patient's symptom as most legitimate when no other aspects of his life were causing him difficulties.

Treatment recommendations were also affected. Subjects were more likely to recommend a placebic treatment ('Take two aspirin and come back later') when the patient had a heavy workload; this is especially noteworthy in light of the fact that all subjects had positive infection evidence. They were also likely to recommend psychological counseling for the patient if he had a sick family member or an unhappy love-life.

Impressions of the patient (shown in Figure 6) were most positive when his love-life was happy and his family healthy. Describing his Romance as unhappy, his family as ill, or both, led to less positive impressions. As in the previous study, impressions of the patient were moderately correlated with legitimacy ratings.

The results suggest that information which merely hints at the potential for psychogenic explanations of illness undermines patient credibility, even when an organic cause for symptoms is known to be present.

Diagnostic Confidence

Our most recent experiment was completed only a few days ago. We had two aims. One was to present patient information in a richer and more realistic format than the scenario approach allows. Thus, we provided 76 subjects with "Student Health" folders containing a variety of records about our patient; our manipulations were imbedded among several pages of forms. Preliminary analyses suggest that, even given the greater complexity of information, our subjects picked up on manipulations of infection evidence,

workload, and love-life, and that these influenced their legitimacy ratings, treatment recommendations, and impressions much as in Experiment 1.

Our second aim was to investigate more fully the issue of diagnostic test credibility. Recall that in Experiment 1, we asked subjects to rate how likely it is that they would recommend that the patient be sent to a local hospital for follow-up testing. We reasoned that if subjects felt unsure of the Student Health Center's diagnostic test results, they would elect this follow-up option. Subjects in the Negative Infection groups were slightly but not significantly less likely to elect this option than were Positive Infection subjects. This suggested that subjects found a negative diagnostic outcome as credible as a positive one, despite the patient's symptom report.

To examine further this possible diagnostic overconfidence, our most recent subjects rated not only the likelihood of recommending follow-up testing in a hospital but also of simply re-conducting the Student Health Center test for throat infection. As shown in Figure 7, Negative Infection subjects were again slightly less likely than the Positive Infection groups to elect hospital testing. However, they were somewhat more likely to opt for reconducting the Health Center test. This raises doubts about a pure "overconfidence" interpretation. Observers are somewhat sensitive to the possibility of diagnostic test error, at least if this possibility is explicitly presented to them.

We used two other items to assess diagnostic confidence. First, we asked subjects to rate how probable they thought it was that the patient really had a throat infection, given the results of the Health Center diagnostic test. The ratings were made on 0-to-10 point scales, where 0 represents no probability and 10, perfect certainty. Positive Infection subjects were nearly unanimous in their certainty that the patient had a

throat infection (Mean = 9.9, SD = 0.3); Negative Infection subjects were relatively certain the patient had no infection (Mean = 1.6) but much less unanimous in their certainty (SD = 2.0).

Finally, we asked subjects to rate how accurate they thought the Student Health Center's test for throat infection was. Positive Infection subjects rated the test as significantly more accurate than did the Negative Infection group (Means = 9.0 and 6.9); as with the previous ratings, the former subjects were more unanimous in their judgments than were the latter subjects (SDs = 1.2 vs. 2.4).

Our tentative conclusion is that college-student subjects, at least, find negative diagnostic results to be confusing. They don't wholly trust negative test results, as indicated by their somewhat greater willingness to recommend re-testing, and their tendency to regard negative results as less accurate than positive results. On the other hand, they interpret negative evidence as signalling a low probability of infection and are relatively unlikely to recommend hospital-based follow-up tests -- the latter of which should, presumably, guarantee greater diagnostic accuracy. Even more indicative of the confusion created by negative diagnostic results is the fact that the correlation between accuracy and likelihood of infection ratings was negligible (-.16) for Negative Infection subjects.

CONCLUSIONS

Because the biomedical model designates organic causes as necessary for defining a symptom as legitimate, it's little wonder that legitimacy ratings were much lower when no infection evidence was available. More interesting is the pattern of results when both the necessary organic cause and potential "psychogenic" causes were co-present.

In all our experiments, mean legitimacy ratings decreased as information about the patients' personal and work-related problems was added to the descriptions, even given positive evidence of an infection. Subjects may have quite reasonably viewed these problems as facilitative causes (Kelley, 1973) of the symptom complaint; after all, stresses may contribute to self-perceptions of symptom severity (Pennebaker, 1982). But given an organic basis for the symptom, such "facilitators" are diagnostically irrelevant. Nevertheless, their presence consistently undermined the value of what should logically have been sufficient, infection-related information. In short, subjects applied what appears to be an attributional discounting calculus in judging the patient's symptom complaint.

This calculus applied not only to observers' judgments of the symptom, but also of the patient. In answering the question, What sort of person would report this symptom?, laypersons take account of whether the necessary organic cause is present. The sort of person who makes complaints in the absence of signs is an undesirable person. But even when organic signs <u>were</u> available, additional information indicating that the victim was suffering both personal problems and work-related stress led to less positive impressions. There is a certain grim irony in the fact that patients and their symptoms become less credible to lay observers as personal and work-related stresses upon patients increase. The irony derives from our growing knowledge that it is precisely the convergence of such negative life circumstances which undermines the immune system and thus increases one's susceptibility to infection (cf. Laudenslager & Reite, 1984). It is possible that people may withdraw sympathy from illness victims, just at the time when sympathy may be most needed (cf. Smith & Turk, 1986).

Perhaps there is a lesson here for beleaguered teachers who have felt suspicious of the student who requests an extension of his or her term paper deadline because of illness, the death of grandma, and/ or a broken heart. There is most certainly a lesson for the student or the patient, namely, when you suffer such an unfortunate confluence of events, cite only the illness, and be certain that it can be documented by organic signs.

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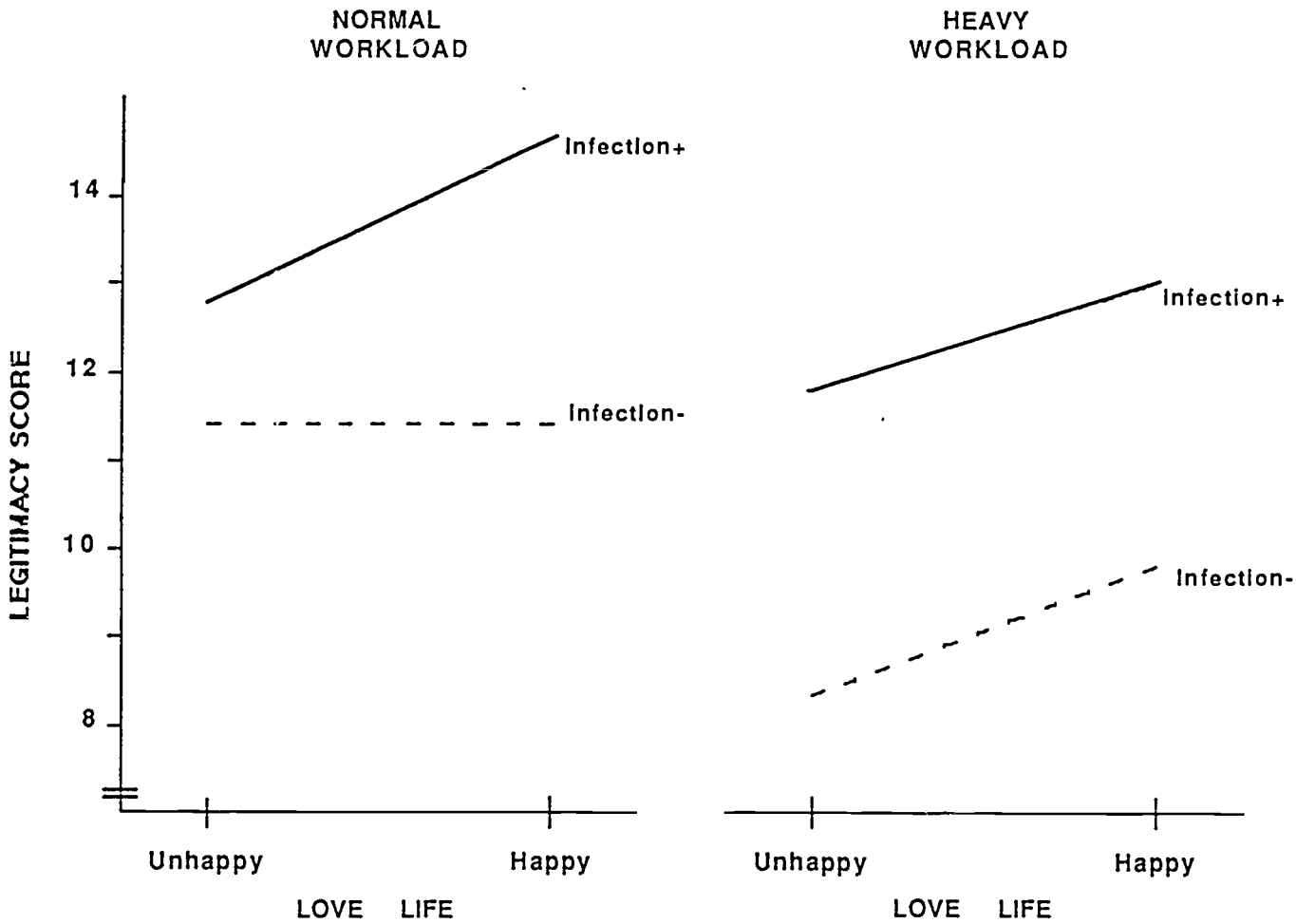
EXPERIMENT 1 SCENARIO

JTA is a student at XYZ College. JTA's workload this semester is about normal -- 4 courses, with no tests scheduled during the previous week or for the next three weeks (**Alternative:** very heavy --5 courses, with midterm exams in 4 of the 5 courses during the next three days). JTA has been involved in a romantic relationship since lat year which has been very satisfying (**Alternative:** broke up just last week).

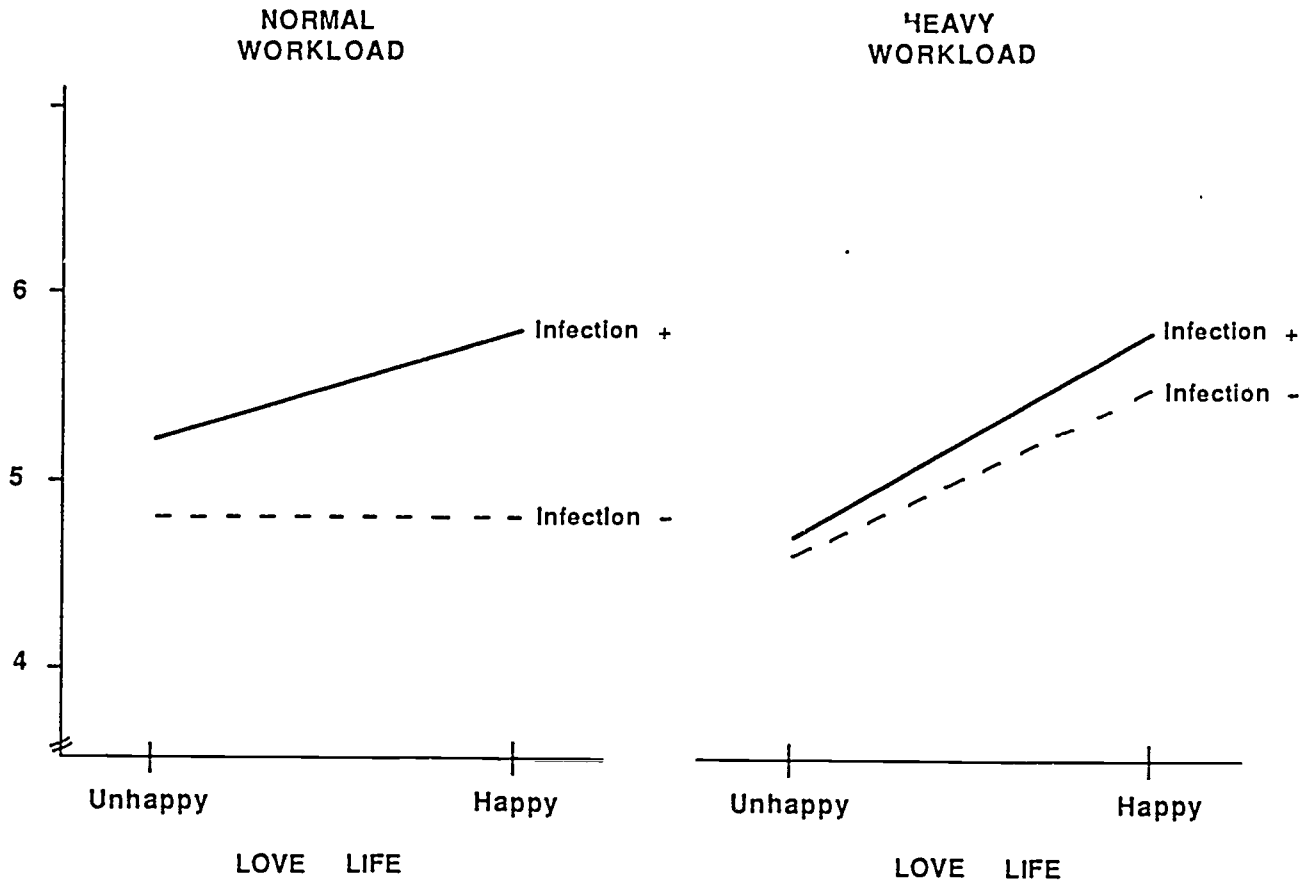
JTA has had a sore throat for the past three days. JTA goes to the Student Health Center for an examination and tells the nurse that the sore throat is very painful. The Health Center runs some tests and finds evidence of a throat infection (**Alternative:** no evidence of any throat infection).

FIGURE 1



EXPERIMENT 1: Perceived Legitimacy of Illness Complaint

FIGURE 2



EXPERIMENT 1: Impression of the Patient

(r with Legitimacy = .53)

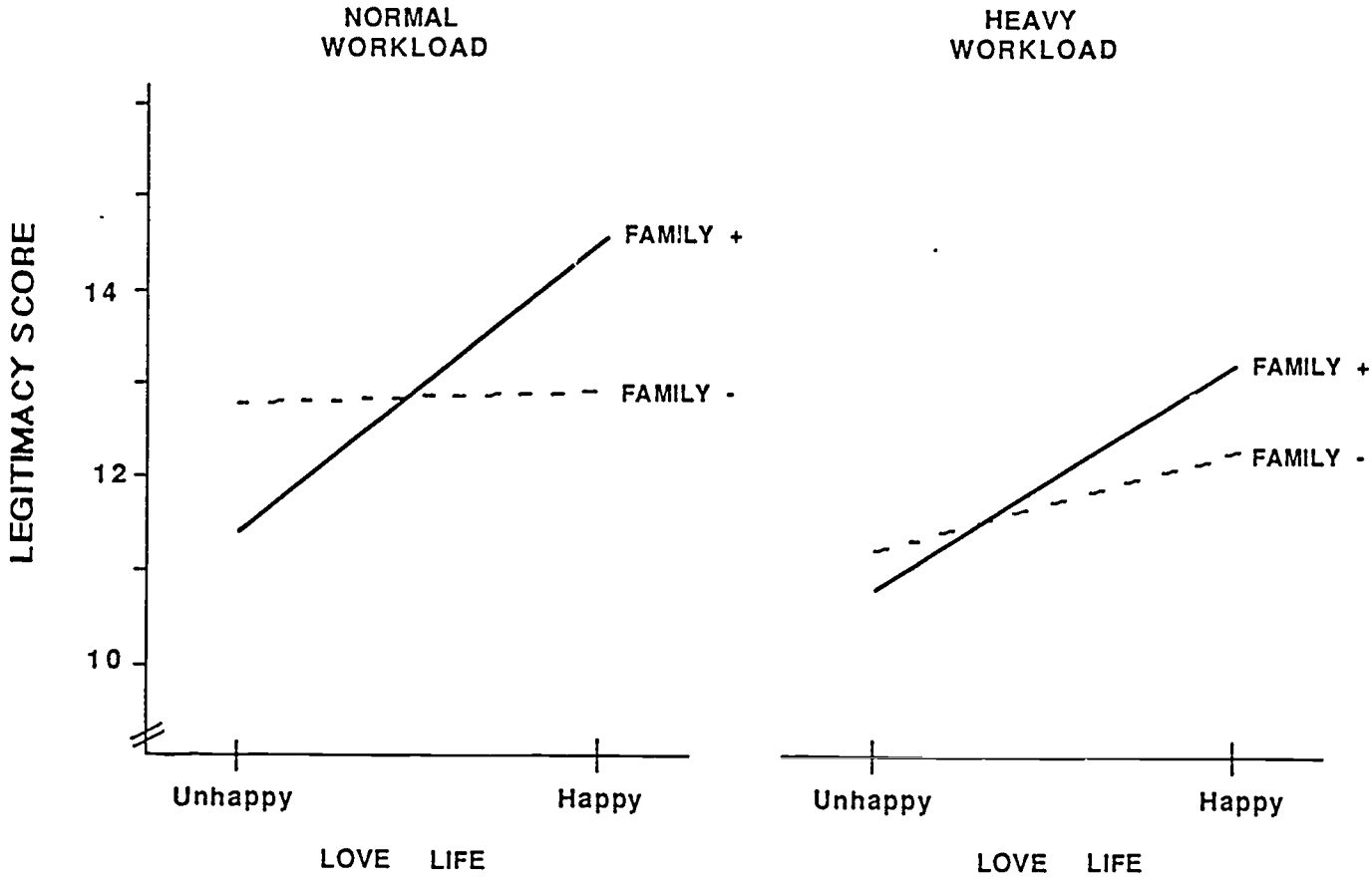
FIGURE 3

EXPERIMENT 2 SCENARIO

JTA is a student at XYZ College. This semester, JTA is taking 4 courses, with no tests scheduled during the previous week or for the next three weeks (**Alternative:** 5 courses, with midterm exams in 4 of the 5 courses during the next three days). JTA has been involved in a romantic relationship since lat year which has been very satisfying (**Alternative:** broke up just last week). In general, the members of JTA's family have no serious health problems (**Alternative:** Recently, a member of JTA's family back home was hospitalized due to injuries suffered in an accident).

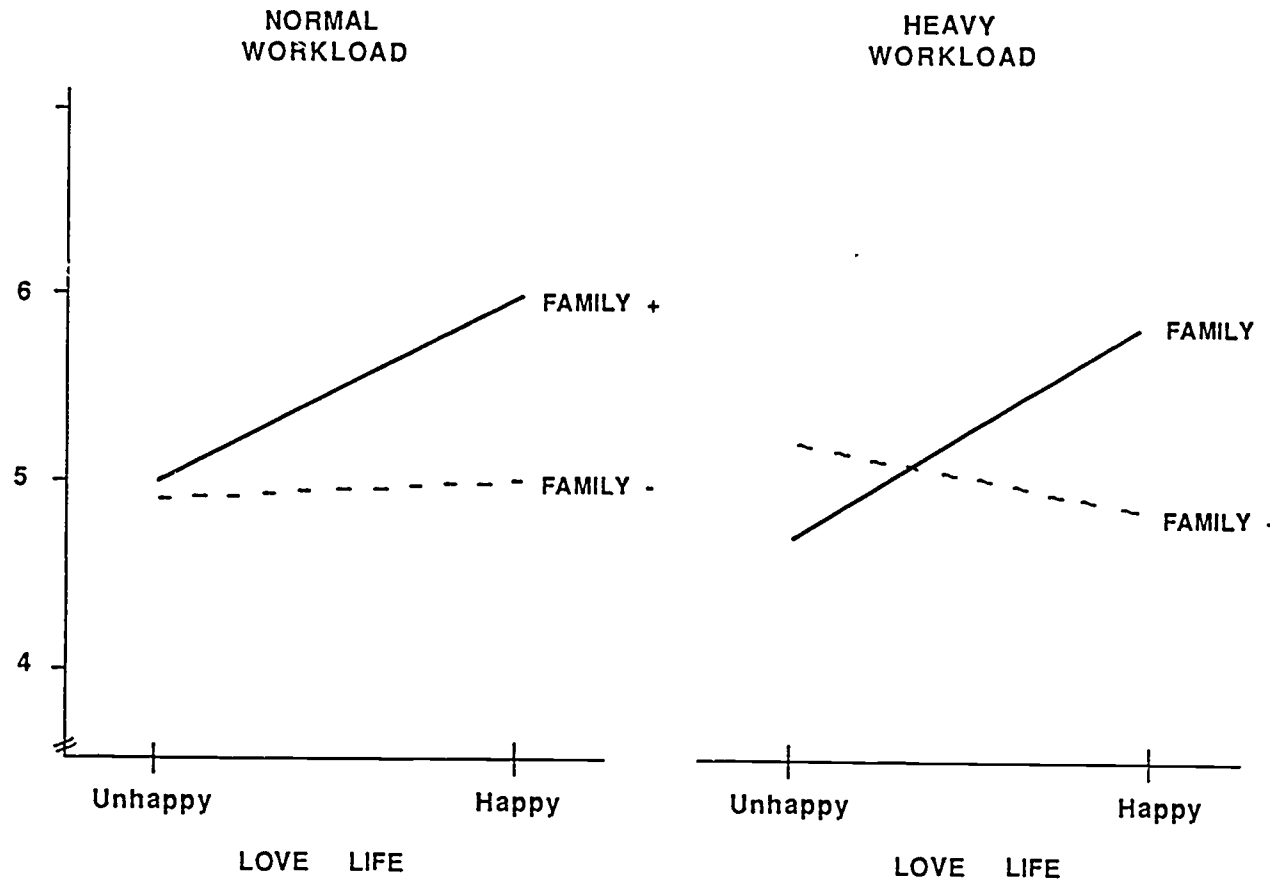
JTA has had a sore throat for the past three days. JTA goes to the Student Health Center for an examination and tells the nurse that the sore throat is very painful. The Health Center runs some tests and finds evidence of a throat infection.

FIGURE 4



EXPERIMENT 2: Perceived Legitimacy of Illness Complaint

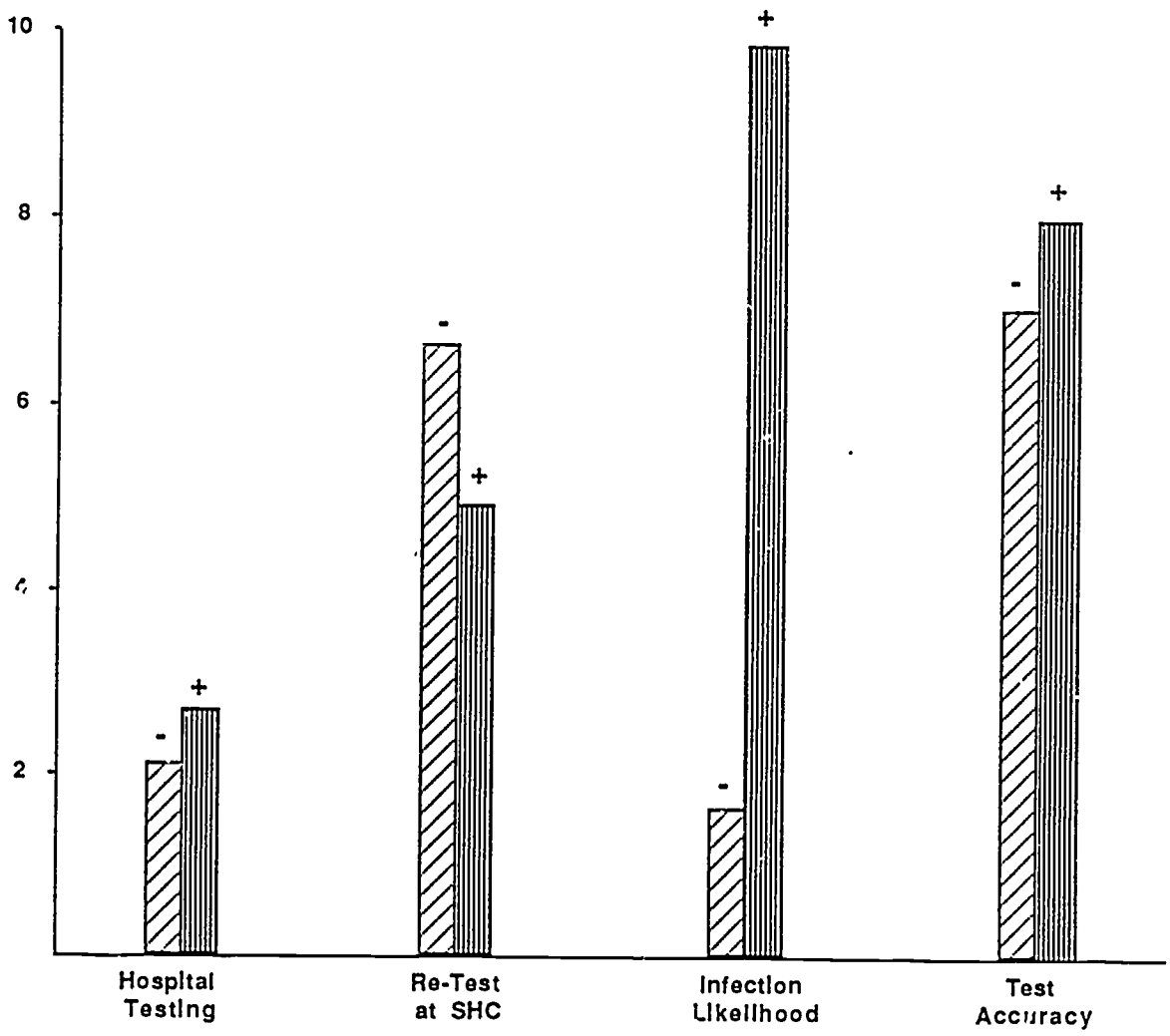
FIGURE 5



EXPERIMENT 2: Impression of the Patient

(r with Legitimacy = .45)

FIGURE 6



EXPERIMENT 3: Diagnostic Confidence

FIGURE 7