

Influence of pet dog on marital conflict resolution:

A psychophysiological study

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This paper was presented at the Delta Society International Conference in Boston, Massachusetts on August, 23, 1986. The authors would like to thank Dr. Peter Messent for his advice and considerable contribution to the conduct of this research, and Sandra Houshmand for her careful work on the behavioral coding of the videotape records.

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The scientific study of marriage in this country was initiated immediately prior to the outbreak of the second world war. The sociologists who carried out this research relied exclusively on subject's responses to questionnaires. It wasn't until the early 1970's that behaviorally oriented psychologists began to systematically study not only what married people said, but also what they did. And thus, the tradition of observing and analyzing the actual interactions of husbands and wives began. Now, some 25 years later, we have learned a great deal about these marital interactions. The great quest of this research has been to discover characteristics of marital interactions that would enable us to separate the happily married from the unhappily married couples, and to predict over time which marriages will improve and which marriages will worsen.

The pursuit of this goal led to the discovery that not all kinds of marital interactions were equally revealing as to the quality of the marriage. Common marital activities such as scheduling activities are by and large carried out in much the same manner in both happy and unhappy marriages. Where differences really seem to emerge is when the marital interaction focuses on an area of conflict such as money, in-laws, the quality of parenting, whether to have children, sex, or communication. Here the research has clearly shown that during conflict discussions and during attempts to resolve conflicts happy marriages and unhappy marriages behave quite differently.

Going beyond these behavioral differences, our own work in this area has demonstrated that during conflict resolution, a number of powerful emotional and physiological changes also occur that can distinguish between happy and unhappy marriages and that can be used to predict how a given couple's marital satisfaction will change over time (Levenson & Gottman, 1983, 1985). This earlier work was conducted in collaboration with Dr. John Gottman of the University of Washington and in these experiments, we studied conflict resolution between husband and wife, alone in a room. A new series of studies is now being carried out to determine how the presence of a third party alters marital conflict resolution. Most of these new studies look at the impact of the presence of a child, but the study I will be reporting today examined the impact of the presence of a nonhuman third party, in the form of a pet dog.

One might ask if there is any reason to expect that the mere presence of a pet dog would have any effect whatsoever on a marital interaction. A small literature does exist that has examined the effects of pets on human to human communications. These studies have presented evidence that the presence of a pet can improve interpersonal communications in the family, among the institutionalized elderly, and even among strangers (Adell-Bath et al., 1979; Andryscio, 1983; Corson & Corson, 1981; Levinson, 1961, 1969, 1972; Messent, 1983; Norling et al., 1983). Although none of these studies have been concerned with physiology, several other studies have reported that companion pets may be associated with alterations in cardiovascular

functions (e.g., Friedman et al., 1980; Friedman et al., in press).

### Method

As indicated in Figure 1, the experimental procedure consisted of three stages. In the Recruitment and Screening stage, a sample of 112 married couples with a pet dog was recruited by advertisements in San Francisco Bay Area newspapers and pet shops. Each couple was paid \$10 for completing a set of questionnaires that assessed their level of marital satisfaction (Burgess, Locke & Thomes, 1971; Locke & Wallace, 1959) and a number of different aspects of pet ownership. From this sample, 30 couples who represented a wide range of levels of marital satisfaction were selected to participate in the laboratory portion of the study for which they were paid an additional \$140.

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Insert Figure 1 about here  
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For the Interaction Session the couple came to the laboratory with their dog at a time chosen so that they would not have spoken to each other for at least eight hours. The dog was placed in a separate room and the couple was brought into the experimental chamber where recording devices were attached to each to measure a broad range of physiological responses. These measures included heart rate, skin conductance, pulse transmission time, peripheral vascular constriction, and general somatic muscular activity. Videocameras and microphones were used to obtain a recording of the interaction. The Interaction Session consisted of three 15 minute discussions, each preceded by a five minute rest period. The couple was first asked to have a 15 minute discussion concerning the Events of the Day, in which they told to bring each other up to date on what had happened during the last 8 hours. Following this, the experimenter entered the room and helped them identify two areas of conflict in their marriage that were suitable for discussion. The couple then discussed the First Conflict area for 15 minutes, trying to work toward a resolution. At this point the dog was brought into the room and allowed time to settle down. Then the couple discussed the Second Conflict area for 15 minutes. Half of the couples followed this procedure, while the other half had the dog brought in for the First Conflict discussion and removed prior to the Second Conflict discussion.

Several days later, each spouse returned to the lab separately for the Video Recall Session in which the spouse viewed the videotape of each of the three discussions and made continuous emotional ratings using a joystick device. Using this device, the spouse rated how he or she felt in the original interaction on a nine point scale anchored by the legends "very negative", "neutral", and "very positive" (for complete details, see Levenson & Gottman, 1983) .

Data analyses were conducted to compare the emotional ratings and physiological responses that occurred while the couple was attempting to resolve a conflict when the dog was present with those that occurred when the dog was not present. To determine if the impact of the dog differed as a function of level of marital satisfaction, couples were divided into three groups: (a) very unhappy, (b) average, and (c) very happy. There were 10 couples in each group. Group means for these three groups are portrayed in Figure 2. Within each group, there were 5 couples for whom the dog was present during the first conflict discussion and 5 couples for whom the dog was present during the second conflict discussions.

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Insert Figure 2 about here  
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### Results and Discussion

Results indicated that the presence of the dog had effects on both the emotional and the physiological responses that occurred during the conflict discussions.

#### Emotional responses

In Figure 3, the husband's and wife's mean affect rating for the five minute period prior to the start of the conflict discussion is shown. In this figure, as in all of the others that follow, the empty bars indicates data obtained from the discussion during which the dog was not in the room, while the cross-hatched bars indicate data from the discussion during which the dog was in the room.

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Insert Figure 3 about here  
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Examining this figure reveals that in the emotional realm, both the wife's,  $F(1,27)=5.27$ ,  $p=.028$ , and the husband's,  $F(1,27)=8.70$ ,  $p=.007$ , emotional ratings were significantly more positive when the dog was present than when the dog was not present. This increased emotional positivity when the dog was present was consistent for couples at all three levels of marital satisfaction. What are the implications of this finding for marital conflict resolution?

We would suggest that a more positive emotional climate prior to the onset of conflict discussion can be conducive to more effective problem solving. Conflict discussion is difficult for all couples. Starting at a more positive affect level may move couples away from the threshold point beyond which the negative affect that inevitably accompanies conflict resolution can escalate into unproductive arguing.

Physiological responses

In the physiological realm, in general we found that the presence of the dog had a "smoothing" effect, significantly reducing the variability of both spouses' physiological reactions on several of our measures.

In some instances, this smoothing effect was consistent across all marital satisfaction groups. For example, in Figure 4, the variability in the husband's peripheral vasoconstriction was sharply reduced when the dog was present,  $F(1,27)=4.80$ ,  $p=.035$ .

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Insert Figure 4 about here  
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In other instances, the reduction in physiological variability associated with the presence of the dog was only seen in the most unhappy marriages. This was the case for the Wife's heart rate variability,  $F(2,27)=3.68$ ,  $p=.033$ , which only was reduced by the presence of the dog in the most unhappy marriages (Figure 5). This was also the case for the Wife's pulse transmission time variability (a measure related to blood pressure),  $F(2,27)=2.82$ ,  $p=.075$ , where the only significant reduction when the dog was present was in the most unhappy marriages (Figure 6).

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Insert Figures 5 and 6 about here  
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Is there any way that these reductions in physiological variability can be considered to be helpful to the process of conflict resolution? Let me offer a very speculative hypothesis. The cardiovascular measures that were affected by the presence of the dog in this study all reflect neural influences of the sympathetic nervous system. Large swings or changes in sympathetic nervous system activity are typically associated with emergency mobilization of biological resources for dealing with dangerous situations such as those associated with fight or flight. For these and other reasons, sympathetic nervous system activation is generally thought to be associated with action rather than with thinking, and with instinctive responding rather than with careful planning. Thus, in unhappy marriages, the presence of the dog, by reducing the magnitude of sympathetically-mediated cardiovascular changes, may produce a physiological climate that is more appropriate for the application of problem solving abilities to the resolution of marital conflicts.

Behavioral responses and spouse-dog interactions

Thus far, I have presented the evidence that the presence of the dog produces emotional and physiological changes in both spouses during marital interaction. I have speculated that these changes may be conducive to more effective conflict resolution. It is worth noting that we have not as of yet directly examined the quality of problem-solving evidenced by the couples in this study. Only by doing so would be able to determine if the presence of the dog actually was associated with more effective conflict resolution. This is something we hope to accomplish in the near future by detailed microanalysis of the videotapes of these interactions.

In the meantime, the microanalyses of these videotapes do allow us to say something about the nature of the interactions between the couples and their dogs that occurred in the experiment. Using a categorical coding system<sup>1</sup> devised by Dr. Peter Messent, we coded the interactions between each spouse and the dog for every 10 second period that occurred between the time the dog was first brought into the experimental chamber and the time when the couple began the conflict discussion (average time = 11.3 minutes). This revealed a very different pattern of interactions between spouses and the dog for couples at the different levels of marital satisfaction.

First, this analysis revealed that for the very unhappy couples there were significantly more negative comments directed toward the dog by both the husband,  $r(27)=-.38$ ,  $p=.040$ , and by the wife,  $r(27)=-.36$ ,  $p=.053$ . There were not a large number of such statements, but when they occurred they were always in the very unhappy couples. We can speculate that this represents some sort of displacement phenomenon in which aggression and anger felt toward the spouse in a very unhappy marriage is redirected toward the pet dog, who functions as a sort of "escape valve" for venting some of this aggression prior to the start of the actual conflict discussion.

In contrast, the dog's lot is much better in very happy marriages. As can be seen in Figure 7, in very happy marriages there is greater passive touching of the dog by the husband,  $F(2,27)=3.24$ ,  $p=.054$ , and greater looking at the dog by the husband,  $F(2,27)=3.58$ ,  $p=.041$ . Approaching significance was the finding of more frequent positive talking to the dog by the wife,  $F(2,27)=2.63$ ,  $p=.089$ .

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 Insert Figure 7 about here  
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Are there any possible connections that can be made between these findings on dog-spouse interactions and the physiological findings reported earlier? One possibility emerges from the data obtained from very unhappy couples. Their tendency to vent negative affect on the dog prior to the start of the marital

conflict resolution may contribute to the finding that these unhappy couples show reduced physiological variability during conflict resolution when the dog is present. If this is true, then their behavior toward the dog may not be particularly humane, but it may be functional in helping produce a physiological state that is more conducive to their dealing with a difficult problem area in their marriage.

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Footnotes

1. The videotapes were coded separately for each spouse for the following categories of spouse-dog interactions every 10 seconds: (a) spouse actively touches dog; (b) spouse passively touches dog; (c) spouse talks to dog positively; (d) spouse talks to dog negatively; (e) spouse talks to dog neutrally; (f) spouse talks about dog positively; (g) spouse talks about dog negatively; (h) spouse talks about dog neutrally; and (i) spouse looks at dog. The tapes were also coded in a parallel fashion for the occurrence of spouse to spouse gazing and speaking, as well as spouse to experimenter gazing and speaking.

## PROCEDURES

### Recruitment and Screening

Marital satisfaction inventories

Pet ownership questionnaire

### Interaction Session

Attach physiological recording devices

Events of Day Discussion

Identify conflict areas

Conflict Discussion I  
Bring in Dog  
Conflict Discussion II

OR

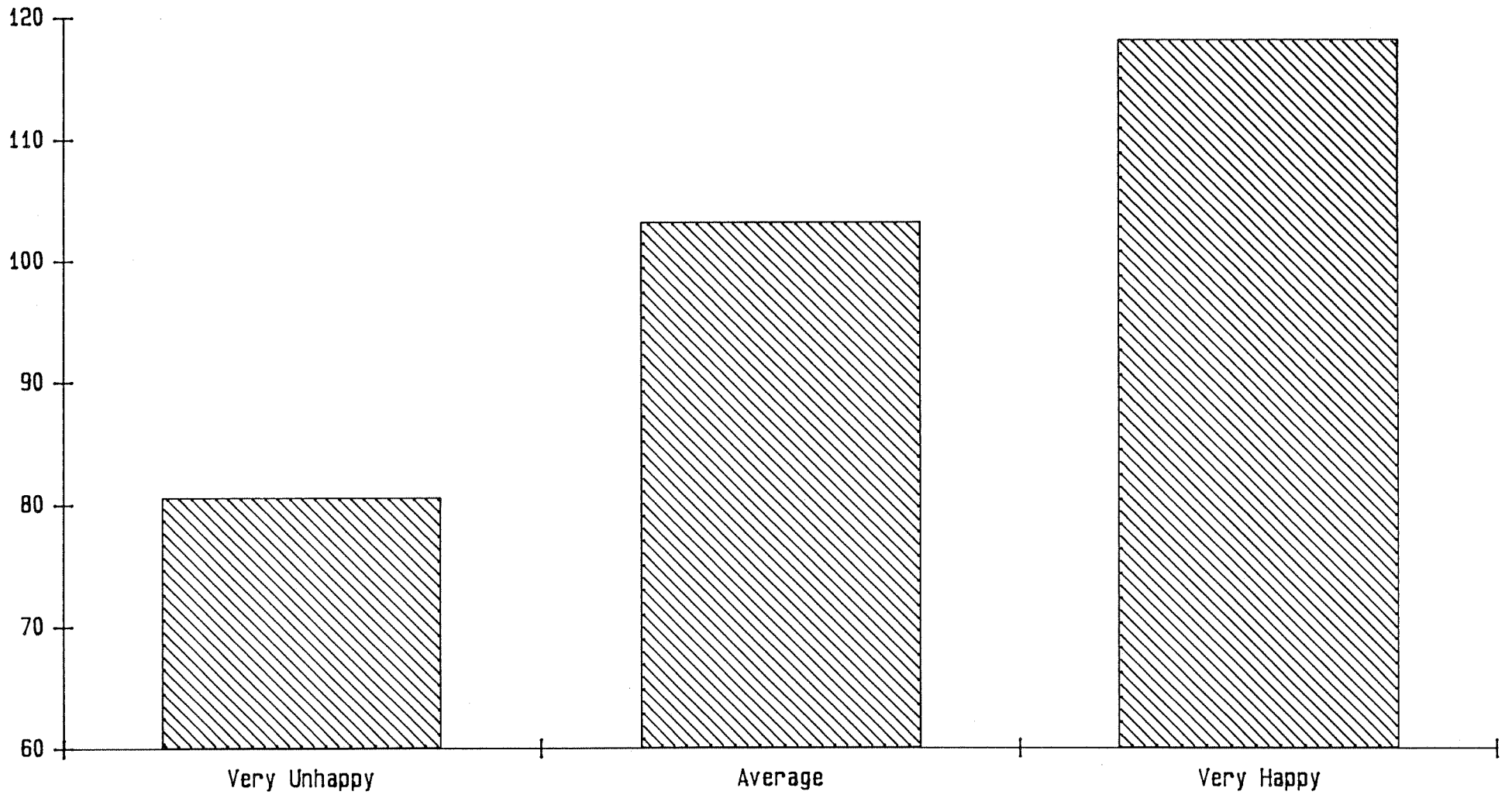
Bring in Dog  
Conflict Discussion I  
Remove Dog  
Conflict Discussion II

### Video recall sessions

Attach physiological recording devices

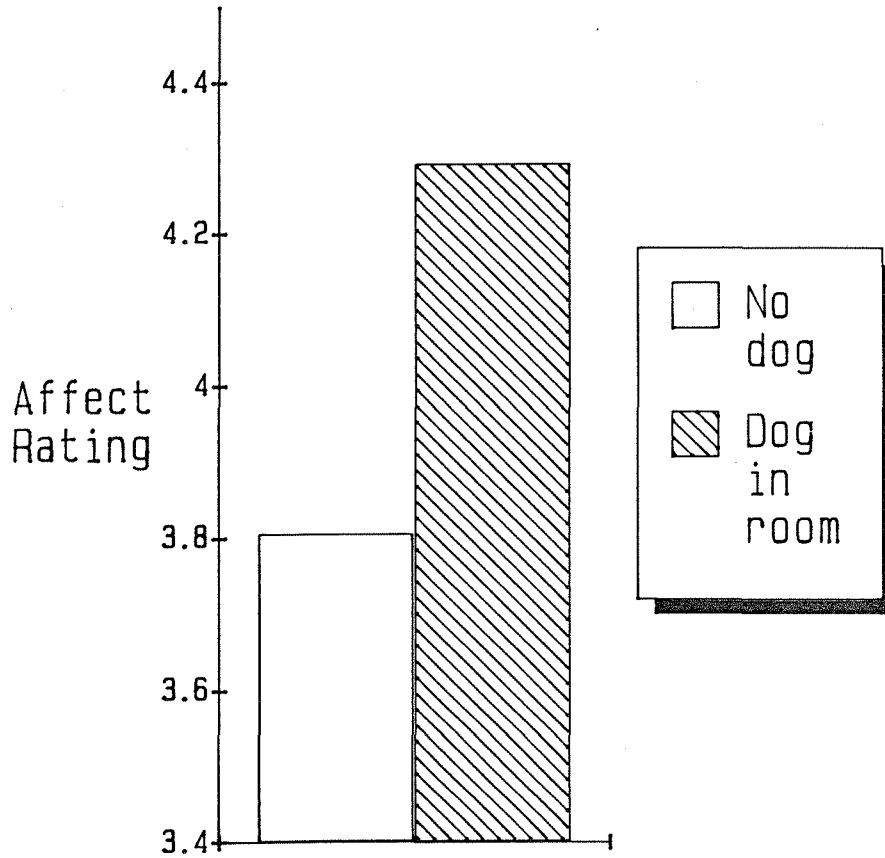
View videotapes of three discussions and provide affect ratings

## Marital Satisfaction Group Means

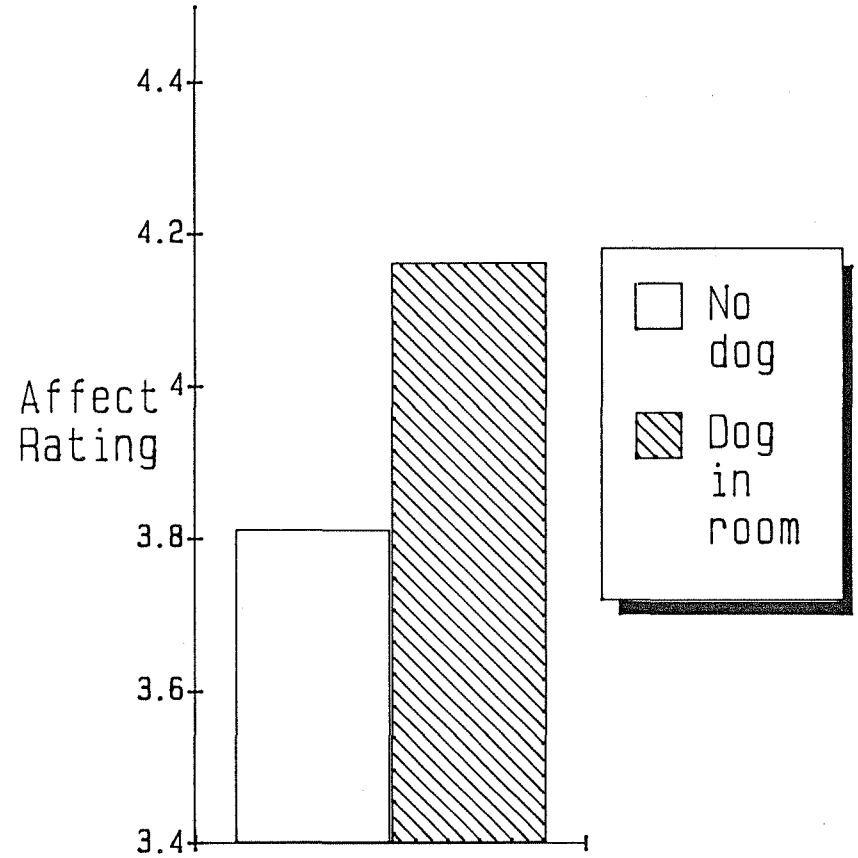


# Affect rating before Conflict Resolution

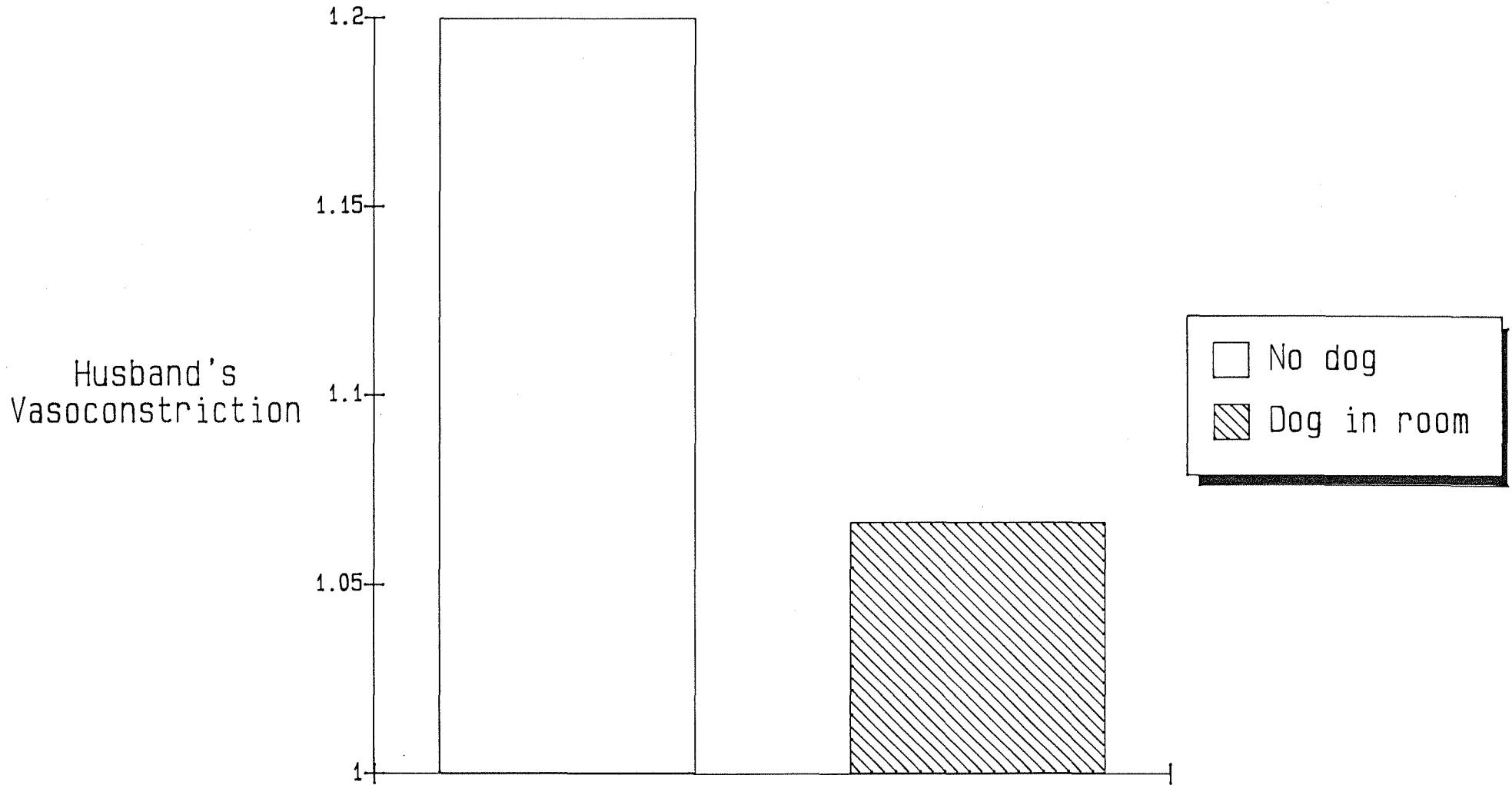
Wife



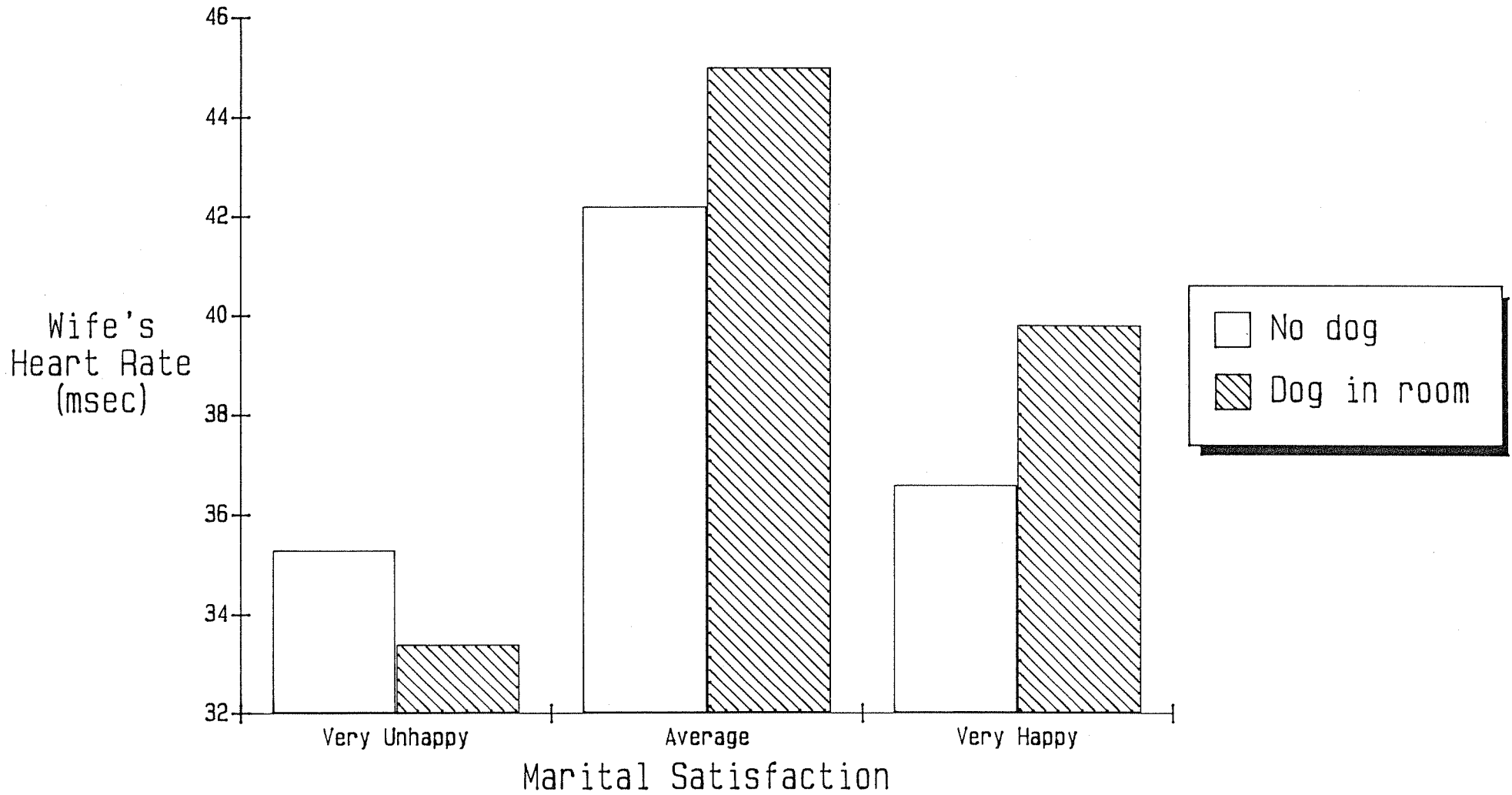
Husband



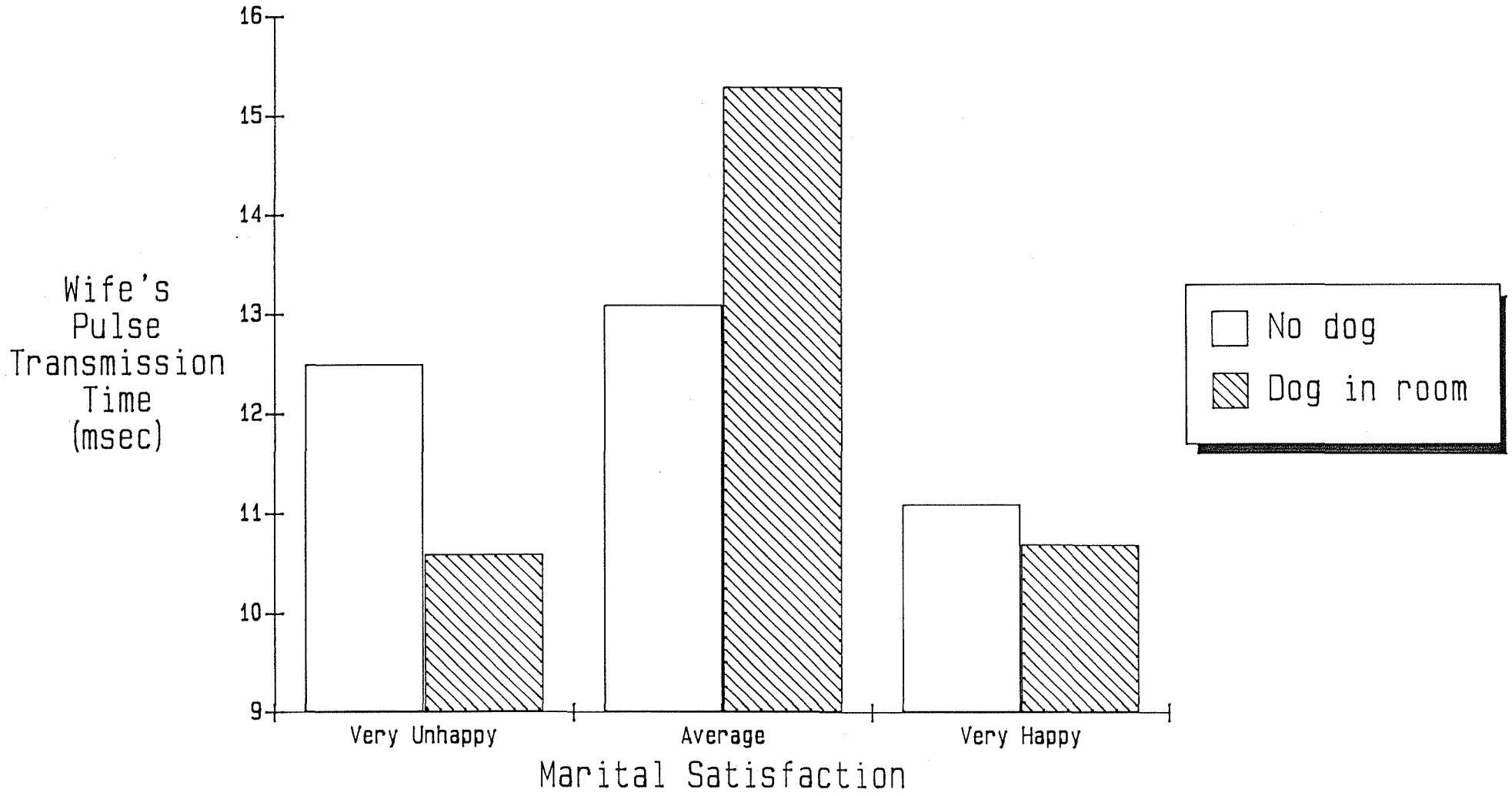
# Physiological Variability during Conflict Resolution



## Physiological Variability during Conflict Resolution

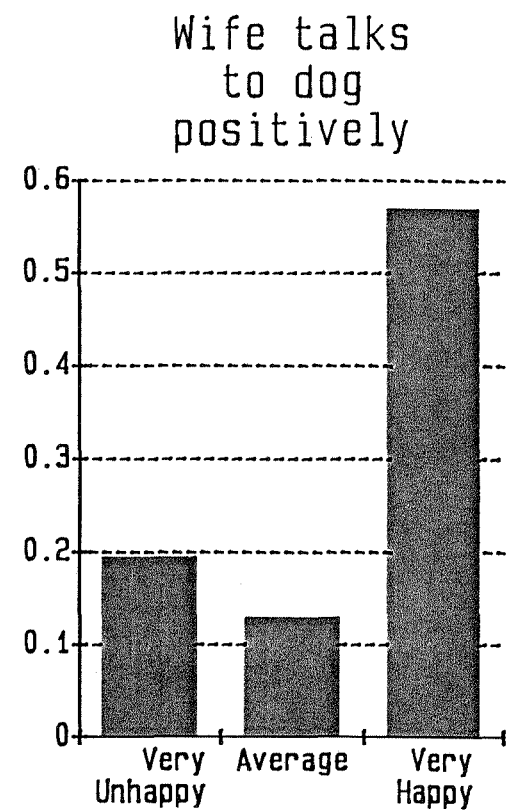
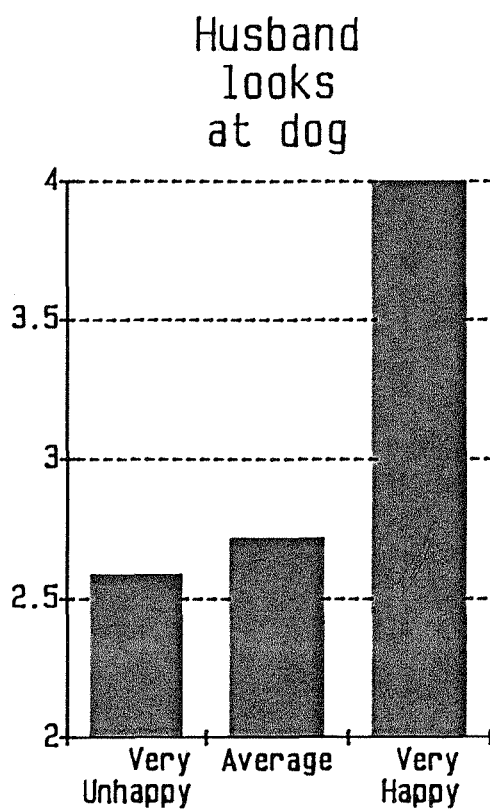
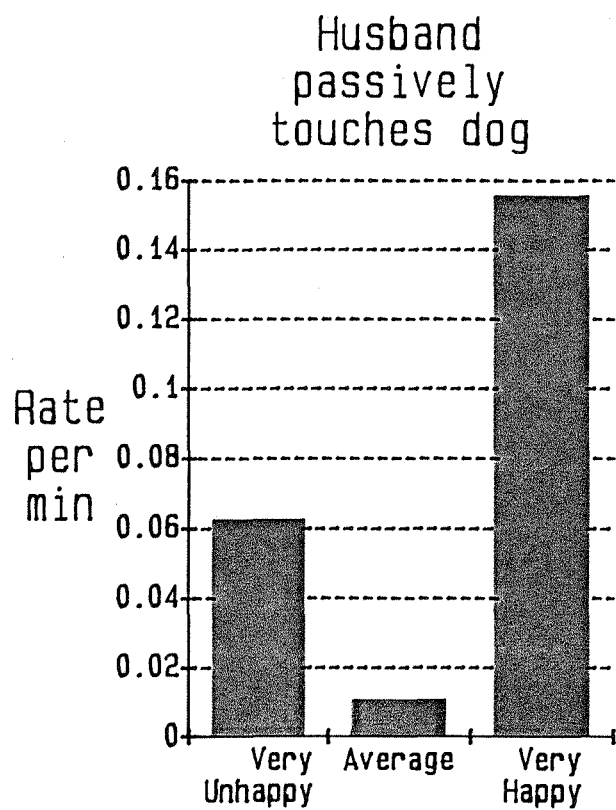


## Physiological Variability during Conflict Resolution





## INTERACTION WITH DOG During Problem Selection



Marital Satisfaction