THE NATURE OF THE CAUSES
AND
THE ATTRIBUTION OF RESPONSIBILITY
IN ACCIDENTS

by

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C O N T E N T S

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II- ABSTRACT

The present study investigated the importance of the nature of causes in attribution responsibility for an accident. Specifically, the experiment explored the relative importance of the immediate cause of an accident versus the prior cause of the accident.

The research was conducted on Boğaziçi University campus. Each of the subjects (61 male 39 female) read the six fictitious insurance company accident reports in which the immediate (internal or external) and prior causes (internal, external or none) were experimentally manipulated.

It was hypothesized that when prior causes are present responsibility attributions based on immediate causes will be affected by prior causes. Their increasing or decreasing effects on attribution of responsibility mostly depend on their type as either internal or external causes.

The results showed that a prior cause opposite to the immediate cause reversed the effects of the immediate cause. The results, also, indicate that subjects who were drivers took prior causes into consideration to a greater extent.

III. INTRODUCTION

Attribution theories are concern with the phenomena involving how people react to and perceive another's actions, feelings or thoughts. An attribution is a cognitive process through which we make inferences about a person's dispositions, actions or about why an event occured. Causal analysis is central to social cognition because event the most trivial of observations often contains an implicit causal analysis. Although people usually causally analyze the social world; it becomes especially important when people are suprised or threatened by events that undermine their beliefs and expectations.

In general, "attribution theory" is a collection of diverse theoretical and emprical contributions that share several common concerns. Attribution research deals with how a social perceiver uses information in social environment to yield causal explanations for events. It examines what information is gathered and how it is combined to for an attribution. Works on causal attribution have generally assumed, either implicitly or explicitly, that motivational factors

are or can be the impetus for causal analysis" (Fiske and Taylor, 1984, p.21). People do make attributions in various situations. When a perceiver sees a person take on action, the perceiver may well be concerned with more than simply registering obserable events. In other words, the perceiver is not merely entertaining himself or herself by constructing causal analysis of the social world. The need to understand, organize and form meaningful perspectives about the myriad events people observe is considered to be the major goal of the attributional process. Without such an understanding of our social world, events would be unpredictable and uncontrollable. These causal analyses are the bases of behavior, other cognitions and feelings.

The attribution theories outlined by Kelley (1967) and, to some extent, the theories of Heider (1958), E.E.Jones and Davis (1965) detail the "correct" manner in which the social perceiver should make attributions. Psychologists call such theories normative, because they detail the appropriate norms or guidelines for how a process should proceed. But the social perceiver does not always follow these normative guidelines. Rather, the attribution process is marked by a number of persistent errors and biases.

What leads to attribution error? Its primary cause seems to be the fact that behavior engulfs the field. That is, what is dominant when one observes another person is how that person is behaving: how the person moves, talks, engages

in other actions that attract attention. These are background factors in the social context, roles or situational pressures that may have given rise to the behavior, which, by contrast, may seem relatively pallid and dull and unlikely to be noticed when compared with the dynamic behavior of the actor. Accordingly, the social perceiver may simply underrate or not notice these less salient factors when trying to comprehend the meaning of behavior (Fiske and Taylor, 1984).

We know that an action or event can be caused by more than one cause; that is, events or actions may have prior causes and these causes are usually seen as less salient factors from the perceiver's point of view.

In this study, prior causes and their importance will be the main interent and they will be examined in connection with attribution of responsibility.

Responsibility is the central issue in law, in the organization of social groups and every day life, but its meaning is not always clear. It is interpreted differently, to some extent, by various legal and social codes of behavior. In this study; it will be considered in terms of common sense and the issue will be approached by examining the law because it appears that responsibility in the law stemmed from commonsense (Hart and Honore 1959 see Fincham and Jaspars 1980). In commonsense, responsibility exists when a person answerable for loss or damage or for his actions. Heider's

theory will also be examined because his view represents more of general conceptual framework about commonsense and responsibility.

a. Studies on Attribution of Responsibility

After Heider put forward his theory, some social psychologists were interested in the attribution process and conducted much research about various aspects of the issue. Research made on attribution of responsibility began with E. Walster's study (1966). Her experiment demostrated that outcome severity determined the amount of responsibility assigned to a hypothetical story character. She has, also, predicted that most people would find it threatening to believe in chance happenings over which they had no control and that might drastically affect their lives. Therefore a painful event may threaten the perceiver at a future time. By assigning responsibility to something rather than a chance, the perceiver feels he will be able to avoid such an event.

Kelly Shaver (1970) proposed a different kind of model called "defensive attribution". He suggested that people are motivated to avoid blame, therefore people should be loath to blame the perpetrator of a bad act if the perpetrator is similar to them in one way. By the same token greater responsibility is attributed to the more severe outcome of an accident in the case of high dissimilarity. Research showed that the outcome severity was effective in the assignment of

responsibility. He also showed that when the circumstances surrounding a bad event were sufficiently similar to those in which the subject lived, he assigned responsibility to stimulus person, presumable reassuring himself that he would avoid the bad event because he was a different kind of person. He also found that age is a factor affecting the responsibility attributions because the subjects attributed increasing responsibility for an accident as the age of the stimulus person increased.

Other studies, also supported these findings. Chaiken and Darley (1973) demostrated that the more severe the consequences, the less responsibility attributed to chance. Also perpetrator-relevant subjects, but not victim-relevant subjects derogated the victim of a severe accident. Mc Killip and Posavac (1975) found that there was greater responsibility assignment to a dissimilar actor for severe rather than mild consequences but less responsibility was assigned for similar ones. In this study, marijuana users were used as subjects and use of the drug was given as the possible cause for the accident. An identical result was obtained in regard to non-teetotalers and alcohol-related traffic accidents. But these results do not indicate that these factors are effective in every situation. Their effectiveness can be retative and can change from situation to situation. For example, in one study, (Arkelin, Oakley and Mynatt, 1979) when the outcome severity was presented with such factors as vehicle speed, road con-

dition, outcome severity had no effect. Even when information about these factors was so vauge that subjects felt they could no longer attribute responsibility; outcome severity remained as a possible but unused cue.

The status of a person was found to be another factor affecting the attribution of responsibility. Aronson (1969, see Schneider and Hastrof 1979) used a drunk driving situation and varied the status of the driver and the man he had killed. Subjects gave the defendant a longer jail term if the victim was an important person in the community rather than a gangster. In a simulated legal situation, people were held more responsible for crimes that hurt "good" people. Research showed that high status characteristics caused less responsibility assignment when the actor was the defendant and more responsibility assignment for the defendant when the actor was the victim.

Brewer (1977) approached the issue from a different perspective. She has interested in the nature of causes and found that where there was at least one internal cause present her model predicted responsibility ratings fairly well (r=.78). However, where only an external cause was present, prior expectations appeared to corretate negatively (r=-.70), with the attribution of responsibility.

These studies show that there are a number of factors affecting responsibility attribution and that their effecti-

veness may change from situation to situation.

Although all these studies consider responsibility assignments from different perspectives, they share a common notion which central to the attribution process and on which assignment of responsibility is based. This is causality.

As in the physical world, one of the fundemental ways we organize our experiences is in terms of causality. This tendency is so pervasive that people may even find causal reasons for random or chance events. Hart and Honore stress the possibility that the common notion of causation may have features which vary from context to context and that there may be different types of causal inquiry, and there may not be a single concept of causation but rather a cluster of related concepts. Nevertheless, the central commonsense notion of causation may be that "a contingency, usually a human intervention, initiates a series of physical changes which exemplify general connections between types of events. Its features are seen in the simpliest case of all, where a human being manipulates things in order to bring about intended change. In most cases it is necessary to draw distinction between voluntary interventions and abnormal events as "causes" and other events as mere conditions" (Hart and Honore 1959, see Fincham and Jospar, 1980, p.99).

In this central notion of causation only those conditions which are abnormal in the sense that they represent a

departure from the ordinary or reasonable expected course of events are interpreted as causes. They are thought of as intervening or intruding into the existing state of affairs.

A causal factor can have more importance than others. In other words, the elimination of one factor might have diminished the likelihood of the results more than would the elimination of the other. Which conditions are threated as abnormal or have more importance usually depends on social norms.

An action may have caused by some combination of personal characteristics and environmental forces. A person may have done something because he had to do it, the environmental forces being unusually strong; or he may have done something because he wanted to do it, internal dispositional properties being strong enough to cause the behavior within the existing environment. That is, causal locus can be either in the stimulus person or in the environment. These can be termed as internal and external causes respectively.

Another important point is that causes have causes themselves or an action produce more than one cause which may be ordered in time sequence as an immediate and prior cause. These aspects of causality are important for responsibility assignment.

On the other hand, it is obvious that the term "attribution of responsibility" does not indicate a simple

judgmental process. In addition to the ambigous nature of the concept, a great deal of confusion arises because social psychologist have tended to ignore fundemental questions regarding responsibility assignment. Psychological statements regarding the assignment of responsibility often rely on implicit, shared assumptions and contextual cues. The fluctuation between different uses of the term "responsibility" generates a lack of conceptual clarity.

According to the Oxford English Dictionary the term "responsible" appears to be (1) answerable, accountable to another for something; liable to, to be called to account and (2) morally accountable for one's actions. Also when we say someone is responsible for effects, we mean any or all of the following: (1) the person caused the effects to happen, (2) the person intended the effects to happen, (3) the person is morally responsible for effects, (4) person has legal liability for effects (Schneider and Hastrof 1979).

According to Hart and Honore, responsibility in law has stemmed from commonsense and direct consideration of various legal notions from a social psychological perspective may also assist in understanding commonsense thinking about responsibility as a paradigm for the analysis of responsibilty attribution. "Man the lawyer might be a more adequate model for the study of responsibility attribution in every day life than man the scientist" (Fincham and Jaspars, 1980, p.95).

In law "responsibility exists when a person's act or omission results in a state of affairs which the law seeks to prevent. The prosecution must usually prove beyond reasonable doubt that the state of affairs the law desires to prevent has been created as a result of the person's act. That is, it must be proved that specific consequences have been caused by the accused. In general a person will not be held to have caused a particular event unless it is possible to establish sufficiently a direct link between the person's act and the event. So the central meaning of responsibility is closely related to the question of causation because perceived causality appears to be a crucial factor in determining a person's responsibility in commonsense" (Hart and Honore, 1959 see Fincham and Jaspars 1980, p.104).

In this study, responsibility will be taken as a judgment about perceived causality and will be applied to human beings for their action or omissions if they explain consequences, results and outcomes of events. Causes will be considered according to their nature as internal and external causes and to their place in the objective time sequence as immediate or prior causes. An internal cause is due to the person and involves ability and motivation. Motivation has two components: intention and exertion. The first refers to what a person wants to do, and the second refers to how hard he or she tries to do it. Exertion varies directly with the difficulty of the task and inversly with the ability of the

person. An implication of this points is that the greatest extersion are need when individuals have little ability. That is, the less ability individuals have the more they will have to exert themselves to succeed at what they want to do. On the other hand, an external cause is brought about by unusually strong physical and social circumstances surrounding the action or event so that they can not be controlled by individuals. Prior and immediate causes can be defined by their places in an objective time sequence. Prior cause is that which comes first in the objective time sequence. Immediate cause refers to the last one in a time sequence. Here an important point is that an immediate cause may be the effect of a prior cause but not the other way around. The relation between the two kinds of causes is asymmetrical.

b. Theoretical Basis of Attribution of Responsibility

Attribution theory in social psychology began with Fritz Heider's studies. In the mid 1960s, Edward Jones and Harold Kelley and their collegues developed, largely from Heider's ideas, more systematic statements on attributional process. But Heider's basic framework on responsibility has remained unchallenged because neither Jones and Davis (1965) nor Kelley (1967) specifically address the issue. For this reason in this study Heider's remarks on responsibility will be taken as the theoretical framework for the assignment of responsibility.

According to Heider, a systematic understanding of how people comprehend their social world can be greatly enlightened by commonsense psychology. That is, the ways in which people usually think about and infer meaning from what occurs around them. This commonsense psychology can be learnt best through the natural language that people employ for decribing their experiences. Heider believed that what motivated the inference process was people's need to predict and control the environment. People have a need to anticipate and influence what will happen to themselves and the others around them, and the best way of doing so is through understanding the causes of behavior (Eisen 1980). Central to Heider's entire theoretical position is the proposition that people perceive behavior as being causal. He also suggested that actions were caused by some combination of internal and external forces and the distinction between internal and external causality important.

Heider, however, never directly defines responsibility. In stead of this, he describes several criteria used by naive observers in its describution. These are ordered according to the relative contribution of external and personal forces to the action outcome and a person can be held responsible at one of the levels of these criteria. These are: (1) Association level, at which the person is held responsible for each effect that is in any way connected with him or that seems in any way to belong to him. (2) Causality level, at which any-

thing caused by P (person) is ascribed to him. Causation is understood in the sense that P was a necessary condition for the happening, even though he could not have foreseen the outcome. (3) Forseeability level, at which P is considered responsible, directly or indirectly, for any effect he may have foreseen, even though it was not a part of his own goal and therefore not a part of the framework of perceived causality. (4) Intention level, at which only that P intended is perceived as having its source in him. (5) Justification level, at which P is held less responsible if intended consequences, or circumstances justify his actions (Fincham and Jaspars 1980).

It is important to note the obvious parallels between naive judgments of responsibility and legal categories for dispensation of justice. Such terms as "criminal neglience", "involuntary manslaughter", and "first degree murder" reflect in their definitions many of the distinctions contained in the different levels of responsibility outlined by Heider (Fiske and Taylor 1984).

According to American Law Institute's model penal code, guilt is attributed to a person who acts "purposely", "knowingly", "recklessly" or "negligently". Defences against a charge of criminal responsibility are mostly based on claiming "mistake", "compulsion", "insanity" and "automatism". These terms, also correspond roughly to commonsense notions as expressed in Heider's scheme of responsibility attributions

(Fincham and Jaspars 1980). These examples show the place of Heider's thoughts in everyday life.

c. The Aim of the Study

To say that an unfortunate event occured "by accident" is to assign it a potentially confusing set of causes. "By accident" carries with the connotation of occurring by change, unpredictably and uncontrollably. But peeplo also often blame other for "causing" accidents. What are some of the determinants of the ways in which people attribute responsibility for an accident?

Prior studies of factors affecting assignment of responsibility for an accident have focused upon characteristics of the victim and perpatrator or the nature of consequences. In most of these studies, subjects were asked to assign responsibility for an accident with a single discrete cause. One can certainly argue that most accidents stem not from a single cause, but from a combination of causal factors. Furthermore the prior causes may or may not be of the same type as the immediate cause.

If information about more than one cause is available the interpretation of any particular cause may be strongly affected by the chain of events in which it is embedded. The major focus of legal argument appears to be the search for prior causes designed either to intensify or mitigate a

defendant's responsibility for a crime.

This study represents a preliminary effort to study such causal chains as elements in the attribution of responsibility.

A major purpose of the experiment is to determine the relative importance subjects assign to the immediate cause of a traffic accident versus the prior cause of the accident.

d. The Hypothesis

When prior causes are present responsibility attributions based on immediate causes will be affected as follows:

a) Internal prior causes will increase the assignment of responsibility.

b) External prior causes will decrease the assignment of responsibility.

IV- METHOD

To test the hypothesis, a survey was performed on Boğaziçi University campus. A converience sample was selected from among the students of Boğaziçi University. Subjects took a questionnaire, which consisted of demographic questions and six fictitions traffic accident reports, and rated the driver's responsibility for each accident report. Two factor repeated measure design was used to analyze the data.

A. DESIGN

In this experiment, a two-factor, 2x3, repeated measure design was used. The first independent variable was immediate cause as either internal or external. The second was prior cause as internal, external or none. These independent variables set up six causal chains as indicated in Table 1. the dependent variable was the subjects' ratings of the extent to which the driver was responsible for each accident.

TABLE 1- Six Causal Chains Set Up By Immediate and Prior Causes

		Immediate Cause	
		Internal	External
Prior Cause	None	I	E
	Internal	II	EI
	External	IE	EE

Stimulus material consisted of six fictitions traffic accident reports. A pilot study was used to construct these reports. A list covering possible causes of traffic accidents was prepared to determine which of these causes were seen as internal and external and how important these causes were for the occurance of accidents. Fifty five subjects were asked to designate each possible cause as either internal or external and to rate its importance on 5-point-scale ranging (See App. A). from (1) for "not at all" to (5) for "very much". Five internal and five external causes which had approximately the same importance were selected. Using these causes six fictitions traffic accident reports corresponding to the six causal chains shown in Table 1 were prepared.

Traffic accidents were selected deliberately because other kinds of accidents may have threatened only a particular group of people. For instance, kitchen accidents are usually relevant to women and laboratory accidents are usually relevant to people who work in such places. In such cases people in positions similar to those mentioned above may have evaluated the person's responsibility differently because of

similarity factors. Using traffic accidents, which is thought of as common for everyone, we tried to avoid the effect of similarity. Other factors affecting the assignment of responsibility such as, age, sex, outcome severity and so forth were not mentioned in the reports.

The subjects were asked to read the traffic accident reports purportedly from an insurance company and rate how much the driver was responsible for each accident. Ratings were made on a 5-point scale ranging from (1) for "not responsible" to (5) for "fully responsible".

The questionnaire consisted of two parts. The first part of contained demographic questions and the second part was the accident reports (See App. B). In the second part the order of the six reports was arranged randomly for each questionnaire to avoid order effects.

B. SUBJECTS

Subjects were selected from among students of Boğaziçi University. The majority of the students came from high SES social strata. A total of 175 students participated the experiment.

Three data collectors waited in front of the doors of the main buildings of Boğaziçi University to catch students leaving the building alone. When a data collector saw such a person, he moved toward him or her and asked whether he or

she would fill in a questionnaire about traffic accidents for a thesis study. Fifty five subjects participated in the pilot study to determine the nature and the importance of causes. Later twenty subjects took a pretest to check out the questionnaire. Finally, 100 subjects (61 male, 39 female) participated in the main study.

V. RESULTS

Two way analysis of varience was performed on the subjects' ratings. The result of analysis, first, showed that the two factors (immediate and prior causes), as expected, have significant main effects in the assignment of responsibility (immediate cause: $F(1,99) = 42.04$ $p < .01$ and prior cause: $F(2,198) = 192.02$). Secondly, the analysis revealed that the prior causes showed a greater percentage of variation explained than that of immediate causes (the percentage of variation explained by prior causes: 34 and the percentage of variation explained by immediate causes: 3). the third findings was that there was a significant interaction between the two factors ($F = (2,198) = 47.63$ $p < .01$). The percentage of variation explained by interaction was found as 9 percent.

The cell means for the dependent variable, responsibility, are presented in Table 2. The numbers indicate that when there was no prior cause, internal immediate cause, not suprisingly, led to stronger attributions than immediate external did (I = 4.34 > E: 2.75).

TABLE 2- Mean Attribution of Responsibility Ratings

		Immediate Causes	
		Internal	External
Prior Causes	None	4.34	2.75
	Internal	4.14	3.78
	External	1.79	2.27

Comparison of two-item chains showed that the prior causes brought about changes in the assignment of responsibility as the hypothesis claimed, except in the immediate internal-prior internal chain. Internal prior cause did not show any increasing effect in this chain. On the contrary, it caused a slight decrease in the assignment of responsibility (II: 4.14 < I: 4.34). But it caused an increase in the immediate external-prior internal condition (EI: 3.78 > E: 2.75).

On the other hand, the subjects attributed less responsibility for the driver whenever an external prior causes existed. When a prior external cause was paired with the same type of immediate cause, the mean of the ratings decreased from 2.75 to 2.27. In the immediate internal-prior external condition it decreased more sharply (I: 4.34, IE: 1.79). In other words, the effect of prior external cause on immediate internal cause was much more than that on the immediate external one. This difference was reflected in the interaction of immediate and prior cause.

Another finding was that the percentage of variation explained by immediate and prior causes was different for subjects with different characteristics. Table 3 shows the percentage of variation explained by immediate and prior causes for different groupings of subjects.

Table 3 indicates that subjects' high schools, sex and experiences in driving affected the percentage of variation explained by prior causes. However, the education level of subjects' fathers and subjects' experiences of traffic accidents did not.

TABLE 3- Percentage of Variation Explained By Immediate and Prior Causes

Groupings		Immediate Cause	Prior Cause
	Overall	3	34
Sex	Male	5	38
	Female	0	24
	University	2	33
	Less than University	4	30
Subjects' High Schools	Turkish Teaching Language	2	28
	Foreign Teaching Language	3	39
Positions on Traffic	Using a Vehicle	3	41
	Not Using a Vehicle	2	26
Traffic Accident Experience	Experienced	2	30
	Not Experienced	3	33

Table 3 shows that the percentage of variation explained by the immediate cause was very low in all cases (overall percentage of variation explained by immediate

cause: 3). It was at a maximum in the mates' ratings (5) and at a minimum in the females' ratings (0). But percentage of variation explained by prior causes were quite high in relative to those of immediate causes. The highest percentage of variation explained by prior causes was in the ratings of those who use a vehicle in traffic and it was the lowest in females' ratings. The percentage of variation explained by the prior causes, also indicates that (a) men paid more attention to prior causes than women did. (b) the subjects who finished a high school which taught in a foreign language saw the prior causes as being more important than those who finished a high school which taught in Turkish language did. (c) The subjects using a vehicle in traffic perceived prior causes to be more prominent than those who did not use a vehicle. The percentage of variation explained by prior causes did not show any differences for the educational levels of the subjects' fathers. Similarly, the percentage of variation explained for those who had never experienced a traffic accident and for those who had experienced one did not show any significant difference.

VI- DISCUSSION

In this study we were interested in "responsibility" attributed to drivers in traffic accidents. The major fows was the function of prior causes in the assignment of responsibility. Secondly, the effect of subject characteristics were investigated. According to our hypotheses attribution of responsibility would be affected by prior causes depending on their type. Prior external causes would lead to less responsibility attribution. On the other hand prior internal causes would result in more responsibility attribution. The results showed that our hypotheses, in general, made good predictions except for one condition (II) in which we did not obtain the expected effect of the prior internal cause. The results also indicated that subject characteristics, could, create differences in the percentage of variation explained by prior causes. These characteristics were the sex, kind of high schools and driving experience. The educational level of the subjects' father and the subjects' experiences in traffic accidents did not make any difference.

Prior external causes decreased attribution of responsibility given the immediate internal and immediate

external causes. This was not a suprising result because prior external causes served as an excuse or justification corresponding to the "justification level" in Heider's responsibility scheme at which "the person's own motives are not entirely ascribed to him but are seen as having their source in the environment ... responsibility for the act is at least shared by the environment" (Heider 1958, p.114 see Fincham and Jaspars 1980). However prior internal causes increased the assignment of responsibility only when paired with an external immediate cause. Prior internal causes did not show the expected effect in the immediate internal-prior internal chain. This was an unexpected result. This result may be explained by "the salient effect" or K.Shaver's "discounting principle". The salience nation here is that "an effect is attributed to the cause that is most salient in the perceptual field at the time the effect is observed" (Kelley and Michelo 1980). In the accident report in this condition, (II) being in a state of excitement and giving a wrong signal were the prior and immediate internal causes. The immediate internal cause (giving wrong signal) could have been perceived as the salient cause. If so the prior internal cause would not have the expected effect on the immediate cause. On the other hand, according to Kelley's discounting principle "the role of a given cause in producing a given effect is discounted if other plausible causes are also present. Discounting is reflected in ways such as a person's feeling of little certainty in the inference that a particular

cause led to particular effect" (Kelley and (Michela 1980, p.470). In the accident report the two causes were not presented to the subjects in such a way that there was a causal link between the two causes. As subjects could not have been certain that a state of excitement was the effective cause in the occurance of the accident. In such a condition, because there was no external causes and because giving a wrong signal could be sufficient to assing responsibility, the prior cause may be discounted.

If the immediate internal-prior internal (II) and the immediate external-prior external chains are taken into consideration, it is seen that the prior causes which are of the some type as the immediate causes affected the attribution of responsibility very slightly. So the idea that prior causes which are the same type to immediate causes do not have on additional effect in the assignment of responsibility may be accepted as an alternative explanation in addition to the considerations mentioned above.

The results also showed that the obtained difference between the immediate internal-prior external condition (IE) and the immediate external-prior external condition (EE) was an unexpected result. The effect of the prior external cause on the immediate internal cause was greater than the effect of the prior external cause on the immediate external cause. That is, the immmediate internal-prior external condition received less attribution of responsibility ratings than the

immediate external-prior external condition. This result may be explained, again, by examining the stories. In the immediate internal-prior external condition (IE), the prior external cause was the lack of a traffic sign showing that the strect was one way. In the immediate external-prior external chain (EE); the prior external cause was the dropping of some pieces of metal on the road. The pilot study showed that there was a difference in the importance attributed of these causes. The lack of a traffic sign had been thought more important than the other one (the mean traffic sign: 3.12, the mean dropping of metals: 2.56). This difference in the importance of prior causes could have brought about the decrease in the assignment of responsibility in immediate internal-prior external (IE) chain.

The results, also, revealed that the subjects' sexes, high schools and traffic experiences created differences in the effectiveness of the prior causes. Table 3 indicated that a) males, b) those who finished a highschool having a foreign teaching language rather than those who finished standard Turkish high school, c) those using a vehicle in traffic, saw prior causes as more important in the assignment of responsibility. The educational level of the subjects' father as at university level or less than university level and the subjects' experiences of traffic accidents as experienced or not experienced did not cause any difference of the percentage of variation explained by prior causes. The biggest difference

was found between the drivers and those who did not use any vehicle. The percentage of variation explained by the prior causes was 41 for drivers and was 26 for those who did not use a vehicle.

On the other hand, further examination of the data showed that, the effect of the subject characteristics other than driving experience could be spurious. The data showed that the proportion of the drivers in each group was highly related with the percentage of varience explained by the prior cause. The proportion of drivers in the group of men was (.50) and the varience explained was 38 percent. This proportion was (.20) for the female group and the proportion of varience explained of (.24). The proportion of drivers and the percentages of variation explained by the prior cause in the other grouping were as follows: the proportion was .48 for those who graduated from a high school having foreign teaching language and the percentage of varience explained was 39. But the varience explained for those who had graduated from a standard Turkish high school was .28 and the proportion of drivers was .26. Thus possibly there were differences in the percentages of variance explained by prior causes between these groupings because the proportions of drivers in each groups were significantly different.

How can using a can be an important determinant of the effect of prior causes? Although we did not include driver's characteristics such as sex, age in the reports to avoid the

effects of these factors, it seems that we were not fully succesfull in controlling for similarity. Those using a car could relate more easily to the stimulus person, the driver. That is, the position of the subjects using a vehicle was similar to the stimulus person's position. "The subjects who expect to play a role in which the previous role occupant perpetrated an accident should attribute the accident to chance causes in order to defend themselves from potential blame in the future" (Chaiken and Darley 1973, p.269).

Thus, it may be the case that subjects who were drivers had a tendency to look for chance causes and were therefore more likely to pay attention to the prior causes.

The results, generally, seemed to support the hypotheses. But, of course, the study had some shortcomings. First, the sample was selected from the students of Boğaziçi University and therefore high SES stratata was overrepresented and their ages ranged only from 17 to 30. Second, situations in the reports were rather remote from real life situations. In these stories only the causes and their types were given to the subjects. But other factors affecting assignment of responsibility, such as the actor's sex, age, and severity of outcome and so forth were not included. In real life situations, however, a person always perceives much more than one factor. For instance, the sex and approximate, age of the driver, the severity of outcome, the weather and road conditions and so forth, in a traffic accident can be seen

easily and simultaneously by the perceiver. Also in real life causal chains are not limited to causes, rather most accidents or events involve longer chains and the order of the type of causes can make the issue more complex. That is, a two-chain model was too limited to represent a real life situation. Because our stimulus material was hypothetical and the sample did not effectively represent a true crossection of people, our results can not be generalized.

In summary, the study revealed that prior causes could be effective in the assignment of responsibility. Their increasing or decreasing effects on attribution of responsibility mostly depended on their type as either internal or external causes. Prior external causes always led to less attribution of responsibility. Prior internal causes, however, caused an increase only when the immediate cause was external. Furthermore, it was also found that the effect of prior causes was mediated by whether the subjects were drivers or not. Subjects who were drivers took prior causes into consideration to a greater extent.

As a result of the study, it is clear that further research are needed in this area. To obtain more accurate and valid results, future research conditions must be kept very close to conditions of real life. But, first social psychologist have to investigate the inherently ambiguous nature of the concept of "responsibility", which has been often ignored. Conceptual clarification is need in order to put the results already obtained in their proper perspective and produce more meaningful results.

32-33

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VIII- APPENDICES

APPENDIX A

Bu anket Boğaziçi Üniversitesi Psikoloji Bölümü Lisansüstü Programı içinde yapılan bir tez çalışmasının ön hazırlığı ile ilgilidir.

Sizden aşağıdaki herbir kaza nedeninin ÖNEM DERECESİNİ, önemsiz (1) den çok önemli (5) ye kadar uzanan ölçek üzerinde bir tanesini daire içine alarak belirtmenizi ve ayrıca nedenin sürücüden mi yoksa dış etkenlerden mi kaynaklandığını ilgili sütuna X işareti koyarak işaretlemenizi rica eder, yardımlarınız için teşekkür ederiz.

Nedenler	Önem Derecesi	Sürücü Etkeni	Dış Etken
- Uykusuzluk	1 2 3 4 5	—	—
- Lastik patlaması	1 2 3 4 5	—	—
- Arabanın periodik bakımının ihmali	1 2 3 4 5	—	—
- Yola aniden hayvan çıkması	1 2 3 4 5	—	—
- Aşırı hız	1 2 3 4 5	—	—
- Otoyola yaya çıkması	1 2 3 4 5	—	—
- Yüksek seste müzik dinleme	1 2 3 4 5	—	—
- Yol koşullarının kötülüğü	1 2 3 4 5	—	—
- Öndeki araçtan bir şey düşmesi veya aracın taş fırlatması	1 2 3 4 5	—	—
- Yanlış sollama	1 2 3 4 5	—	—

N e d e n l e r	Önem Derecesi	Sürücü Etkeni	Dış Etken
- Öndeki aracın aniden durması	1 2 3 4 5	—	—
- Tek yönlü yola ters taraftan girme	1 2 3 4 5	—	—
- Karşı taraftan gelen aracın yanlış sollama yapması	1 2 3 4 5	—	—
- Frenlerin boşalması	1 2 3 4 5	—	—
- Yanlış yere park etme	1 2 3 4 5	—	—
- Gece iken farların yakılmaması	1 2 3 4 5	—	—
- Yandaki kişi ile sürekli konuşma	1 2 3 4 5	—	—
- Trafik işaretlerinin eksikliği	1 2 3 4 5	—	—
- Kırmızı ışıkta geçme	1 2 3 4 5	—	—
- Fizyolojik rahatsızlık (Kalp krizi, kramp vb.)	1 2 3 4 5	—	—
- Direksiyon bozulması	1 2 3 4 5	—	—
- Sakinleştirici veya uyuşturucu ilaç alınması	1 2 3 4 5	—	—
- Alkollü araç kullanma	1 2 3 4 5	—	—
- Arka stop lambalarının fren anında çalışmaması	1 2 3 4 5	—	—
- Çok yakından takip etme	1 2 3 4 5	—	—
- Havada yoğun sis olması	1 2 3 4 5	—	—
- Sinyal vermeme veya yanlış sinyal verme	1 2 3 4 5	—	—
- Araç kullanma anında heyecanlı olma	1 2 3 4 5	—	—

APPENDIX B

Bu anket, B.Ü. Sosyal Bilimler Enstitüsü Psikoloji Bölümü Lisansüstü Programı içinde yapılan bir tez çalışmasına gerekli datanın toplanması ile ilgilidir.

Lütfen önce şahsınızla ilgili soruları cevaplayınız.

- Cinsiyetiniz: a) Kadın b) Erkek
- Yaşınız:
- Babanızın en son bitirdiği okul:
  a) Hiç okumamış b) İlk c) Orta d) Lise e) Üniversite
- Babanızın mesleği
  a) İşçi-memur veya emeklisi b) Serbest meslek (Av., ecz. (Av., Ecz., vb.) c) Tüccar d) Esnaf veya sanaatkar e) Çiftçi f) Diğer bir meslek
- En uzun süre yaşadığınız yer:
  a) Büyük şehir (Ankara, İstanbul, İzmir) b) Diğer bir şehir c) Kasaba d) Köy
- Bitirdiğiniz Lise:
  a) Yabancı dille eğitim yapan lise b) Normal devlet lisesi c) Türkçe eğitim yapan özel lise veya kolej d) Diğer bir lise
- Bitirdiğiniz lisenin bulunduğu bölge:
  a) Büyük şehir b) Diğer bir şehir c) Kasaba
- Trafikte herhangi bir araç kullanıyor musunuz?
  a) Evet b) Hayır
- Herhangi bir trafik kazası geçirdiniz mi?
  a) Evet b) Hayır

Aşağıda bir sigorta şirketinin kaza raporlarından kısa alıntılar sunulmuştur.

Sizden aşağıdaki her bir kazada sürücünün ne kadar sorumlu olduğunu '1' (hiç sorumlu değil) den '5' (tam sorumlu) e kadar uzanan ölçek üzerinde bir tanesini daire içine alarak belirtmenizi rica eder, yardımlarınız için teşekkür ederiz.

12.8.1981 tarihinde Maslak yolunda meydana gelen kazada öndeki kamyondan metal parçaları döküldüğü ve sağ ön lastiği patlattığı yapılan kaza soruşturmasından anlaşılmıştır.

Hiç sorumlu değil	1	2	3	4	5	Tam sorumlu

20.10.1984 tarihinde Bolu yolunda meydana gelen kazada bölgede kaza anında yoğun sis tabakasının bulunduğu kaza soruşturmasında ortaya çıkmıştır.

Hiç sorumlu değil 1 2 3 4 5 Tam sorumlu

8.4.1980 tarihinde Ortaköy-Ulus yolunda meydana gelen kazada sürücünün tek yönlü yola yanlış taraftan girdiği fakat yolun tek yönlü yol olduğunu gösteren herhangi bir trafik işaretinin de bulunmadığı yapılan soruşturmadan anlaşılmıştır.

Hiç sorumlu değil 1 2 3 4 5 Tam sorumlu

17.3.1981 tarihinde Sahil yolunda meydana gelen kazada sürücünün heyecanlı olduğu ve yanlış sinyal verdiği kaza soruşturmasından sonra ortaya çıkmıştır.

Hiç sorumlu değil 1 2 3 4 5 Tam sorumlu

10.12.1983 tarihinde İstanbul Çevre yolunda meydana gelen kazada sürücünün öndeki aracı çok yakından takip ettiği kazadan sonra yapılan soruşturma sonucunda ortaya çıkmıştır.

Hiç sorumlu değil 1 2 3 4 5 Tam sorumlu

18.6.1982 tarihinde İstanbul-İzmit karayolunda meydana gelen kazada sürücünün yanındaki yolcu ile sürekli konuştuğu ve bu sırada yola aniden büyükbaş bir hayvanın çıktığı yapılan soruşturmadan anlaşılmıştır.

Hiç sorumlu değil 1 2 3 4 5 Tam sorumlu