

COMPLIANCE WITH LEGAL REGULATIONS

Observation of Stop Sign Behavior

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THEORETICAL FRAMEWORK

Assessing the Impact of Legal Regulations

THERE IS AN AGE-OLD CONTROVERSY over the relative importance and feasibility of formal and informal controls of human behavior. One body of theory, most notably the Sumner tradition, has held that control by formal laws is unimportant and dependent compared to controls by other means: "Acts of legislation come out of the mores. . . . Things which have been in the mores are put under police regulation and later under positive law. . . . The regulations must conform to the mores, so that the public will not think them too lax or too strict."¹

Others have argued, that formal law can and does increasingly become an agent of social control. Gunnar Myrdal has voiced "grave scepticism" toward Sumner's approach² and Edwin Lemert has contrasted Sumner's "passive" social controls with "active" social control.³ There have been, however, relatively few attempts to discover the actual

1. W. G. SUMNER, *FOLKWAYS* 55 (1906).

2. G. MYRDAL, *AN AMERICAN DILEMMA* 1031ff., 1048ff. (1964).

3. E. Lemert, *Social Structure, Social Control, and Deviation*, in *ANOMIE AND DEVIANT BEHAVIOR* 88ff. (M. B. Clinard ed. 1964). See also *The Folkways and Social Control*, 7 *AM. SOCIOLOGICAL REV.* 394-99 (1942).

impact of formal legal regulations.⁴ The main reason for this seems to be that it is extremely difficult to assess the net impact of such regulations. In most everyday life situations, legal norms carry a social stigma, *i.e.*, they are paralleled and backed by non-legal norms. But there are also certain legal regulations which carry little or no such social stigma. As a consequence they are backed only or at least mainly by legal sanctions. Their violation has been labeled "folk crime," which includes all "illegal acts which are not stigmatized by the public as criminal."⁵ Typically, these are regulations of technical character and recent origin. Examples are: traffic violations, white collar crimes, and chiseling in unemployment compensation. The regulations that "create" folk crime have not yet received an overall name. Because of their supposed lack of social stigma, I will refer to them as "unstigmatic" regulations. Unstigmatic regulations offer a chance to measure the effect which formal legal regulations *per se* have on human behavior.

Compliance With Legal Regulations

Compliance as it is understood here, is more than outward conformity with a regulation. Behavior which externally (objectively) conforms with a certain regulation may not coincide with internal (subjective) intention to conform. In performing the prescribed behavior, the actor may not be aware of the existence of the regulation, or he may be forced to conform for reasons that have nothing to do with the norm or its sanctions. The concept of compliance has, therefore, three essential elements: (a) norm-awareness, (b) intention to conform, and (c) conforming behavior.

Norm-awareness cannot always be assumed to exist. Especially at times when the law is constantly changing, many people will not know of the existence and/or the content of a particular regulation. Norm-awareness can, however, be assumed in the case of self-explanatory signs, announcing the content of the regulation. With respect to the intention to conform, two reasons can be distinguished: the actor may have

4. Recently, interesting attempts have been made by so-called legal "impact studies" along quasi-experimental lines. These studies involve the comparison between actual behavior patterns in jurisdictions having a certain law, and the behavior patterns which would have existed in those same jurisdictions, had the law in question never been enacted. The main flaw in the ingenious research designs developed is, that they rely mainly on official statistics. See R. Lempert, *Strategies of Research Design in the Legal Impact Study*, 1 L. & Soc'y REV. 111ff. (Nov. 1966).

5. H. L. Ross, *Traffic Law Violation: A Folk Crime*, 8 SOCIAL PROBLEMS 232 (1961).

internalized the norm (compliance for its own sake) or he may fear sanctions (enforced compliance). Both are included in the concept of compliance as it is used here. There will be a few remarks on the special problems of enforced compliance at the end of this paper.

Observation of Stop Sign Behavior

Of the many possible unstigmatic regulations, I have selected stop signs for study. They are easily observable and quite self-explicatory. The language of the sign is simply and unambiguously "Stop," and frequently a white line indicates where to perform the required act. In California, where I made the observations for this study,⁶ the relevant legal regulation is the California Vehicle Code Section 22450. All California drivers must have come across the pamphlet *California Vehicle Code Summary*, since it is distributed to everybody who wants to take the driver's examination.⁷ In three different paragraphs of this pamphlet, the driver is told to bring his car to a "full stop back of the limit line."

I have distinguished above between compliance and conformity. As an observer, however, I had to use conformity as an indicator for compliance.⁸ But I tried to make this indicator more sensitive by excluding some typical cases in which norm-awareness or the intention to conform are highly doubtful. With respect to stop signs such cases are:

a. *Stopping during cross traffic.* In such a case, it is unclear whether the regulation or the perceived "impossibility" to proceed makes the driver stop. I have excluded all cars that stopped or slowed down during cross traffic (*i.e.*, all cars that let cross traffic cars pass before they themselves proceeded). This method has one shortcoming: it may exclude cars driven by overcautious

6. For details on the collection of data see Appendix.

7. DEPARTMENT OF MOTOR VEHICLES (ed.), 1966, at 54. Section 22450 reads:
 "The driver of any vehicle upon approaching any entrance of a highway or intersection, or railroad grade crossing signposted with a stop sign provided in this code, except as otherwise permitted or denoted in this code, shall stop:

(a) At a limit line, if marked, otherwise before entering the crosswalk on the near side of the intersection or, if not, then before entering the highway or intersection."

Comparable regulations are assumed to exist in other states and thus, they are likely to be familiar to out-of-state drivers.

8. Another indicator, but again only an indicator, would be a statement of the actor as to whether he knew the norm and/or conformed voluntarily.

drivers, who stop and wait until finally cross traffic appears. The number of strict conformers will be slightly reduced by this method.

b. *Stopping for staying.* Some people stop at stop signs in order to stay there rather than to cross the intersection. They are usually easy to distinguish from the true compliers, and can be excluded from the sample.

c. *No stopping because stop sign has been overlooked.* This is much harder to distinguish. I saw only one case where the observable evidence could be most easily interpreted that way (relatively high speed; near collision with cross traffic; double check and slow proceeding).

The most severe limitations of the so specified indicator of conformity are the following two:

a. Some people may slow down or stop neither because of the sign nor because of actual cross traffic, but because they anticipate cross traffic. The ideal research design would be the following: to observe the patterns of behavior before and after the regulatory sign has been installed. This turned out to be impossible in the present study because the Berkeley Department of Public Works informed me that no new stop signs were to be installed during this period.

b. Although the stop sign regulation is extremely clear, there may still be differential perceptions or interpretations as to what the norm prescribes. The people who violate the strict official interpretation of the norm may, in doing so, comply with a less strict interpretation which they regard as the relevant one. This limitation is, however, less damaging for my present purposes, since I am interested in the amount of compliance with the regulation-as-announced. More important is a variation of this same limitation: some drivers may experience their maneuver as a full stop. This possibility cannot be excluded, and will again reduce the number of observed compliers.

PRESENTATION OF FINDINGS

The only empirical data on stop sign behavior published to date was published in 1934 by Floyd H. Allport in a paper on conforming be-

havior.⁹ These data have been reprinted in at least one major textbook as an example for the generalization that “the majority of persons conform to the prescribed standard and that small deviations are more frequent than large deviations. This generalization appears to hold true for many kinds of social behavior.”¹⁰ Whatever may be true for other kinds of social behavior, this generalization is not supported by the data gathered here for stop sign behavior, if we separate cross traffic from other sorts of traffic.

TABLE 1
CROSS TRAFFIC AND STOP SIGN BEHAVIOR

Type of Stop	Type of Traffic Included		Total Traffic Including Cross Traffic	Total Traffic Excluding Cross Traffic
	Cross Traffic Only			
	ALLPORT %	FEEST %	FEEST %	FEEST %
Full Stop (Stop) *	75.5	78	34	15
Rolling Stop (Very slow)	22.0	21	47	58
Half Stop (Slightly slow)	2.0	1	16	22
No Stop (Same speed)	0.5	0	3	5
N	2114	72	241	169

* The categories in brackets are Allport's.

Table 1 compares Allport's data with equivalent data from my sample. He used only such cases “where there was traffic coming at right angles to the direction of travel of the motorists concerned; so that a double incentive to stop was presented in the possibility of a collision and the presence of the stop sign.”¹¹ Such a procedure, as I have discussed above, obscures completely the subjective side of the compliance with a norm. The conformity figures will rise and fall with the amount of cross traffic. When I follow Allport's procedure of data collection (Column 2), my results are strikingly similar to his. But when I use

9. F. H. Allport, *The J-Curve Hypothesis of Conforming Behavior*, 5 J. Soc. Psych. 141-83 (1934). Quoted after the abridged version in READINGS IN SOCIAL PSYCHOLOGY, 55-67 (Newcomb *et al.*, eds. 1947).

10. G. A. LUNDBERT, *et al.*, SOCIOLOGY 344 (1958).

11. F. H. Allport, *supra* note 9, at 57.

my own procedure, compliance with the norm (*i.e.*, a full stop in the absence of cross traffic) goes down from 78 per cent to 15 per cent.

My complete data on compliance, *i.e.*, with cross traffic always excluded, are shown in Table 2.

TABLE 2
STOP SIGN BEHAVIOR AT THREE BERKELEY STOP SIGNS

Type of Stop	Location of Stop Sign			Type of Crossing			Grand Total %
	Russell & Ellsworth %	Rose & Shattuck %	Russell & Adeline %	Left Turn %	Straight On %	Right Turn %	
Full Stop	11	15	20	16	14	14	14
Rolling Stop ...	72	50	50	75	63	46	62
Half Stop	16	28	25	9	19	32	21
No Stop	1	8	4	—	8	8	4
N	227	99	68	68	246	77	391

Table 2 shows that 14 per cent of the observed drivers bring their cars to a full stop without being forced to do so by cross traffic (*i.e.*, regardless of whether the driver makes a right or left turn or whether he goes straight on). The type of crossing makes a difference only when the car is not brought to a full stop. Left turners are least likely and right turners are most likely to make a half stop or no stop at all. This can presumably be explained by the fact that such maneuvers are most risky in left turns and least risky in right turns. An additional factor may be the California Vehicle Code Section 21453 which permits right turns against red lights. I think that these variations can be seen quite independently from compliance or non-compliance with the stop regulation. It is not surprising that the number of stop violators goes up in locations with a good range of vision (field of sight). It is also more puzzling that the number of strict compliers varies directly with range of vision: from 11 per cent at Russell & Ellsworth (smallest range of vision) to 20 per cent at Russell & Adeline (widest range of vision). But I think the explanation is as follows: In order to see into the cross street at Russell & Ellsworth one has to proceed deeply into the intersection, while at Russell & Adeline one can get a fairly good view into the cross street right from the stop sign (see Appendix).

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TABLE 3

STOP SIGN BEHAVIOR: DAY AND NIGHT; ACCOMPANIED AND SINGLE

Type of Stop	Day			Night			Total	
	Single %	Accompanied %	Total %	Single %	Accompanied %	Total %	Single %	Accompanied %
Full Stop	9	20	13	17	24	20	10	21
Rolling Stop	70	62	66	48	41	45	66	57
Half & No Stop	22	18	21	36	35	35	24	22
N	227	84	311	48	29	77	275	113

I expected lower compliance during the night hours, because the drivers might feel less observed and inhibited by official and unofficial law enforcers. This turned out to be only partly true: the number of half stops and no stops goes up, but so does the number of full stops (Columns 3 and 6). I tried to reduce the latter phenomenon to the different composition of the population of nightly drivers. Night drivers are more likely than day drivers to be young, male, and accompanied, but neither of these differences explains the decrease in compliance. My best guess is that at night the cautious are even more cautious and the daring even more daring.

Much clearer results derive from a comparison of single and accompanied drivers: accompanied drivers are consistently more norm-abiding than unaccompanied ones. This can be interpreted as a measure of social pressure, and it could show that the stop regulation is not purely unstigmatic. The difference between single and accompanied drivers is more marked during daytime than at night. This again seems to indicate that there are factors operating at night that do not show up in this analysis. Because of this, and because of the relatively small number of night cases, I have excluded the nightly stop sign behavior from the following tabulations. Since, on the other hand, the single-accompanied distinction seems to yield fruitful results, I have retained it throughout the following tables. Official statistics have often been quoted to the effect that the Negro crime rate is higher than that of whites. One of the exceptions to this rule is drunken driving where whites predominate, but with respect to all other traffic regulations Negroes are supposed to be more often delinquent than whites.¹² But official statistics refer only to the

12. G. MYRDAL, *supra* note 2, at 973.

number of arrests and convictions, not to the number of actual violations. Our data indicate that whites predominate among the stop sign offenders.

TABLE 4
STOP SIGN BEHAVIOR BY RACE AND SES

Type of Stop	Low SES*			High SES			Total	
	(1) Negro %	(2) White %	(3) Total %	(4) Negro %	(5) White %	(6) Total %	Negro %	White %
Full Stop	30	12	18	4	11	10	15	11
Rolling Stop	65	74	71	76	63	64	72	66
Half Stop & No Stop	5	14	11	20	26	26	13	23
N	20	42	62	25	199	224	46	268

* Indicated by cars which I classified as "old."

Table 4 shows that 23 per cent of whites and only 13 per cent Negroes are in clear violation of the norm. If that is true not only for Berkeley but for the United States, and if the official statistics are correct, this could only be interpreted as a case of differential law enforcement along racial lines. In accordance with previous studies,¹³ Table 4 indicates that "folk criminality" is associated with high rather than with low social standing (Columns 3 and 6).

Wholesale compliance was observed by 18 per cent of drivers with low socioeconomic status as opposed to only 10 per cent of those with higher status. There is a question whether the relationship between race and compliance can be reduced to one between class and compliance. Table 4 offers no clear evidence on that point. With respect to Negroes, the factor class makes a big difference: while only 4 per cent with high SES show strict compliance, the percentage for those with low SES is 30. With respect to whites the factor class does not seem to make much of a difference: strict compliance of those with old cars is about as frequent as of those with new cars. This could be interpreted to mean that class makes a difference only with respect to Negroes: one could speculate about "ritualism" on the part of lower class Negroes, and about "successful integration" on the part of middle class Negroes. But I am more inclined to think that the age-of-car indicator for social class, valid as it may be for Negroes, is quite misleading among whites in Berkeley. There are not too many lower class whites in Berkeley, but there are many middle class students with old cars.

13. See H. L. Ross, *supra* note 5, at 233.

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TABLE 5

STOP SIGN BEHAVIOR BY RACE AND SOCIAL PRESSURE

Type of Stop	Single		Accompanied		Total	
	Negro %	White %	Negro %	White %	Negro %	White %
Full Stop	0	10	41	13	15	11
Rolling Stop	87	68	53	66	75	67
Half Stop & No Stop	13	22	7	21	11	22
N	30	194	17	70	47	264

The relationship between race and compliance is modified considerably by introduction of the single-accompanied variable. It turns out that social pressure (as distinct from legal pressure) makes a considerable difference for Negroes while it hardly makes any difference for whites. This lends some empirical support to my assumption that stop signs are unstigmatic norms; at the same time the assumption is shown to be correct for whites only.

TABLE 6

STOP SIGN BEHAVIOR BY SEX AND SOCIAL PRESSURE

Type of Stop	Single		Accompanied		Total	
	Male %	Female %	Male %	Female %	Male %	Female %
Full Stop	6	12	18	25	9	16
Rolling Stop	73	65	60	63	70	64
Half Stop & No Stop	21	23	22	12	21	20
N	130	96	50	40	180	136

Table 6 shows that women consistently comply more strictly with the legal regulation than men do. Social pressure (indicated by the single-accompanied variable) seems to have about the same influence on men as it has on women as far as strict compliance is concerned.

Table 7 shows that the age of the driver consistently makes a difference with respect to compliance. The youngest and the oldest drivers are more likely than others to comply strictly with the stop regulation. At the same time, however, we find a positive relationship between age and

TABLE 7

STOP SIGN BEHAVIOR BY AGE OF DRIVER AND SOCIAL PRESSURE

Type of Stop	Single			Accompanied			Total		
	-30 %	35-55 %	60- %	-30 %	35-55 %	60- %	-30 %	35-55 %	60- %
Full Stop	11	6	16	29	18	(17)	17	9	16
Rolling Stop	59	74	64	54	61	(75)	57	70	68
Half Stop & No Stop	30	19	20	18	20	(8)	26	20	16
N	54	144	25	28	49	12	82	193	57

the clearer types of violation. One can speculate, that age indicates two quite different things; on the one hand younger people may be more daring, on the other hand they have learned the legal norm more recently and may not yet have reinterpreted it. This would seem to be confirmed by the breakdown in single and accompanied drivers. Single drivers under thirty are much more likely than accompanied ones to go through stop signs. There is no difference for older drivers in this respect.

Summary

The data presented above indicate that the number of people who strictly comply with the formal legal regulation is about 15 per cent. This figure is subject to some variation relative to time, place, and the type of people involved.

It seems likely that the number of strict compliers is slightly higher than the data would indicate (see earlier discussion on pp. 451-2). But the fact that more than four-fifths of the people observed violate the legal norm (in its strict, official interpretation), is certainly striking. We have to consider, however, two things:

(a) The official enforcement of stop sign regulations appears to be rather lax in Berkeley.¹⁴ The police, more concerned with speeding, apparently cite stop sign violators mainly in connection with other violations, and particularly as a result of accidents.

14. Out of a total of 22,158 moving violations in Berkeley, which resulted in citations during 1966, only 617 were stop sign violations.

(b) The data indicate, that most people (62 per cent) make a rolling stop, and one can very well argue, that the "living law" permits this type of behavior. This would bring the number of people who comply, to some extent, with the law to 76 per cent (79 per cent during daytime). Only 4 per cent (2 per cent during daytime) go through stop signs in a truly reckless manner ("No Stop"). While this may be reassuring, it does not invalidate my findings which are concerned with the regulation as it is announced and reiterated, rather than with the "living law."

ON THE GENERALIZABILITY OF THE REPORTED DATA

The data presented in this paper can hardly be generalized even for Berkeley, since they stem from observation of only three arbitrarily chosen intersections. But how far could data of this kind be generalized if their reliability were beyond doubt? Three factors seem to make generalizations even to other "folk crimes" difficult and hazardous:

1. We have already mentioned the problem of enforcement. This is of particular importance for unstigmatic norms as the one here under consideration. Clearly, our results cannot be generalized to regulations that are more strongly enforced. For the purposes of generalization and comparison it will be necessary to devise some sort of "enforcement coefficient."¹⁵

2. Another decisive variable is norm-awareness. With respect to stop signs, we have assumed that knowledge of the regulation is relatively high. This is certainly true in the sense that the norm is clearly announced and propagated. Our results cannot be generalized to norms where this is not the case. On the other hand, I suspect that even very clearly announced regulations can be reinterpreted or misinterpreted by those to whom they apply if enforcement is lax.

3. The last factor is the perceived reasonableness of the norm. Our data indicate that most drivers regard the strict version of the stop

15. Some such measures for traffic law enforcement have been devised by John A. Gardiner. As to the impact of enforcement, however, he claims that "while few empirical studies have been made on this point, there is some evidence that police enforcement rates have *no* influence whatsoever on the rate of traffic violations . . ." in *Police Enforcement of Traffic Laws: A Comparative Analysis*, Sept. 1966, at 17 (paper presented at the Annual Meeting of the American Political Science Association, New York).

regulation as unreasonable. In order to see whether there is any danger, the driver has to proceed into the intersection, and if there is no visible danger, there is no good reason to stop. The perceived unreasonableness is more marked in locations where the limit line is drawn too far back, and the driver's field of vision is very limited (see Table 2).

Widespread violation is less likely in the case of norms that have all the trappings of reasonableness. In order to be able to generalize from our results to other types of folk crime, we would have to know how reasonable the different norms are supposed to be from the point of view of a certain population.

APPENDIX

Collection of Data

1. *Time and Places of Observation.*

Stop sign behavior was observed at three stop signs in Berkeley:

(a) Shattuck & Rose:

2/13/67	11:30 a.m.—12:30 p.m.
2/13/67	3:30 p.m.— 4:30 p.m.
2/16/67	midnight
2/17/67	midnight

(b) Russell & Adeline:

2/27/67	3:00 p.m.— 5:00 p.m.
2/27/67	9:00 p.m.—10:00 p.m.

(c) Russell & Ellsworth:

3/2/67	9:00 a.m.—11:00 a.m.
3/2/67	2:15 p.m.— 4:15 p.m.
3/6/67	9:00 a.m.—12:00 p.m.
3/6/67	5:30 p.m.— 6:30 p.m.
3/8/67	9:30 p.m.—10:00 p.m.

Diagram A

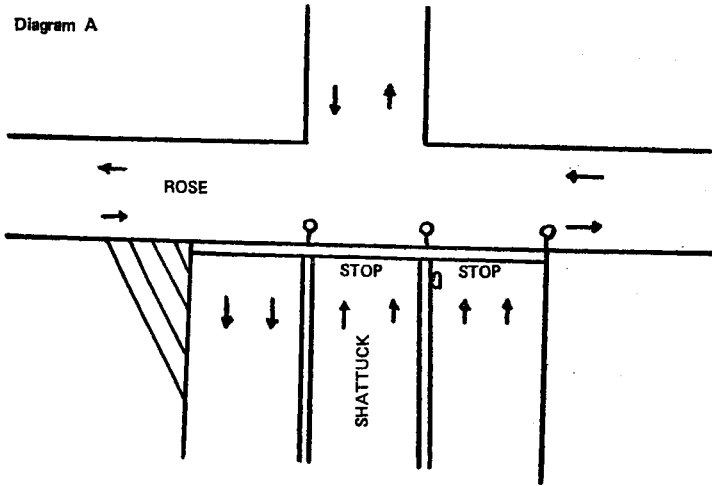


Diagram B

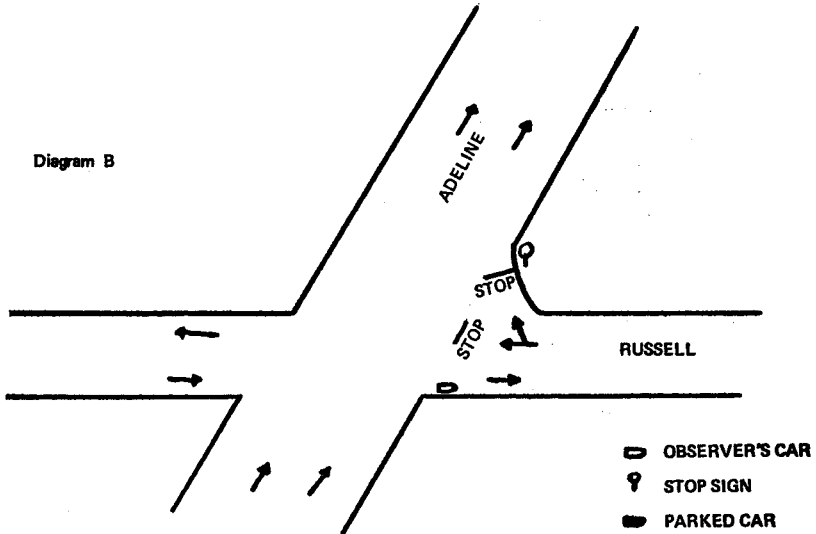
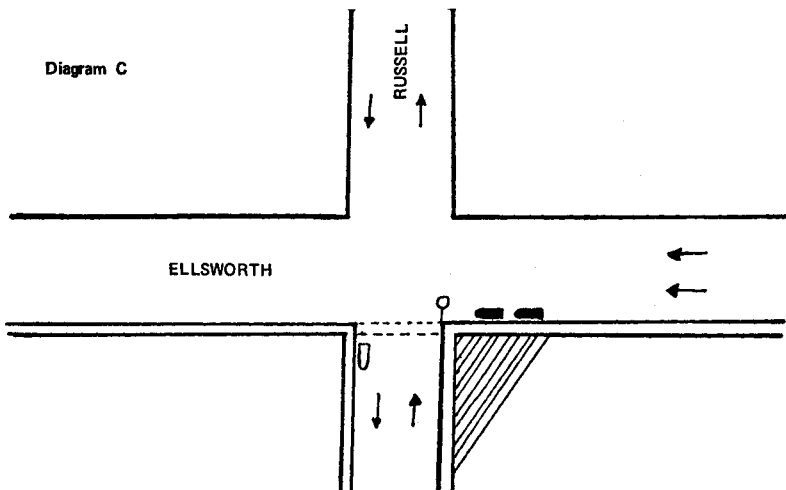


Diagram C



2. *Recording of Observations.*

I recorded the following informations on the cars that passed the stop signs under observation:

- (a) Type of car,
- (b) Estimated age of car: old (ten years and older); middle; new (last two to three years),
- (c) Sex of driver,
- (d) Race: Caucasian, Negro, Oriental,
- (e) Estimated age: 20, 25, 30, . . .
- (f) Single/accompanied,
- (g) Type of stop (see below, 3),
- (h) Type of crossing of intersection: left turn, straight on, right turn.

3. *Types of Stop.*

The police brochure *Required Stops*¹⁶ defines "Stop" as "cessation of all forward motion." "A cessation of forward movement even though it is momentary will satisfy the legal requirements." The brochure advises police officers to watch the wheels of the vehicle: "If they do not cease their motion at any time, your testimony to this effect will usually be sufficient."¹⁷

The brochure lists 5 types of "stops":

- (a) Complete stop. Vehicle comes to a full stop before proceeding.
- (b) Rolling stop in which the vehicle goes through the stop zone at 2-10 mph.
- (c) Half stop, in which vehicle slows but goes through stop zone at 10-20 mph.
- (d) No stop. Vehicle does not slow but continues on through the stop zone at a constant rate.
- (e) Over speed limit. Vehicle goes through stop zone in excess of the speed limit.¹⁸

4. *Sampling.*

(a) Cars.

I have attempted to observe and report the stop sign behavior of all cars that passed the sign during the time of observation. This was not always possible, e.g., when more than one car approached the intersection. In such cases, I made it a rule to take the first one, and to disregard all others until I had finished recording the information on it. At one point, I tried to replace

16. TRAFFIC INSTITUTE OF NORTHWESTERN UNIVERSITY, *REQUIRED STOPS* (Traffic Law Enforcement Series, Pub. No. 2541, 1958).

17. *Id.* at 5.

18. *Id.* at 10.

this somewhat unsystematic procedure by recording only every third car. This worked well, but I dropped it because it took too much time.

(b) Intersections.

I did not sample intersections. The three intersections which I observed were chosen for the following reasons: Rose & Shattuck because it gives the driver a relatively wide range of vision (field of sight); Ellsworth & Russell, since it gives the driver relatively little range of vision; Russell & Adeline, to make up for the total lack of Negroes at Rose & Shattuck.

5. *Unobtrusiveness.*

Ideally, one should presumably stay at some distance from the stop sign and use binoculars. I observed the cars from within my own car which I had parked near the stop sign. I do not think, however, that my approach was in any way obtrusive, since I was just another person sitting in a parked car. The only "danger" was to come into eye-contact with the approaching drivers. This can, however, be avoided by choosing a good location (see maps of intersections, Diagrams A, B and C, on page 459).