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Hitchhiking: Social signals at a distance

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Hitchhiking is used as a model for the experimental investigation of long range communication. Two studies were conducted to ascertain the importance of sex, eye contact, food, secondary sex characteristics, and hand gestures in hitching a ride. Eye contact was directed either at the driver or along the side of the road. The hitchhiker was either eating or not eating fruit. The secondary sex characteristics were bust size in females and beard growth in males. Either a traditional thumb-up or a palm-up, flexed-fingers begging gesture was utilized. The recorded data include the number of cars passing the hitchhiker, the number of motorists offering rides, their passengers, and the types of vehicles they were driving. The findings suggest that the effective signals in hitching a ride are those that maximize interest and safety and minimize danger. The hitchhiking model was discussed in terms of hominid sociability and the dependence of individual survival upon group cohesion and cooperation.

Humans, like other social primates, require communication for survival. Both short and long range signals are utilized in this exchange. Although some research has been done on short range communication (e.g., Eibl-Eibesfelt, 1974; Ekman, 1971; Ellsworth, et al., 1972), very little is known about more distant signaling. Hitchhiking is an example of dyadic interactions at a distance which lend themselves to observation and quantification. It is a sequence of nonverbal behaviors in which the hitchhiker solicits assistance from a motorist, who in turn either stops or drives on. The driver's rapid decision is a function of his response set and the signals of the hitchhiker. This process can serve as a model for the experimental investigation of long range communication.

An ethnographic study of hitchhiking by females in Great Britain (Carlson, 1972) and a series of experimental observations on the effects of dependency and sex in highway assistance (Pomazal & Clore, 1973) indicate the promise of such a model. These studies suggest that some signals are more effective (e.g., attractive solicitors) than others (e.g., physically handicapped solicitors) in hitching a ride. Preliminary observations of actual hitchhikers by the present authors indicated that visibility, gestures, facial expressions, sex, age, dress, and climate might influence ride success.

A pilot study was conducted to ascertain the importance of sex and eye contact in hitching a ride. The recording of driver characteristics of those who stopped and the possible significance of eating behavior in social interactions, as suggested by a panhandling study (Lockard et al., Reference Note 1), were included in the preliminary study. After analysis of the pilot data, a more extensive study (Main Study) was conducted to confirm the initial findings and to pursue other pertinent variables.

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METHOD AND RESULTS

Preliminary Studies

Two experimental designs were explored in the pilot field studies. The first design utilized a modified procedure taken from Ellsworth et al. (1972) consisting of an observer positioned at an intersection and a hitchhiker standing approximately 50 ft beyond the signal light. The observer recorded data on driver, passenger(s), and vehicular characteristics of the first car stopped at the red light. When the light changed, the hitchhiker attempted to hitch a ride from that vehiclee (all following vehicles were ignored by the hitchhiker). This procedure only allowed for the gathering of data on one car per minute. Out of 240 vehicles so laboriously described, only 20 stopped for the hitchhiker (a success rate of 8.33%). Small sample size precluded statistical comparison of the characteristics of motorists who stopped and those who did not.

A second design focusing on a description of only those vehicles which stopped for the hitchhiker allowed the solicitation of a ride from all passing motorists. As shown in Table 1, the general success rate in hitching a ride was again low (6.88%). Females with eye contact obtained the most rides; males without eye contact were the least successful. Eating fruit did not facilitate ride offers.

Table 1
Preliminary Study: Percentage Success in Hitching a Ride, Chi-Square Tests of Significance, and Probability Levels for the Manipulated Signals

	Percentage Ride Offers*	χ^2	p
Total	6.88		
Eye Contact	10.05	5.35	< .05
No Eye Contact	4.80		
Food, Eye Contact	8.64	.20	n.s.
No Food, Eye Contact	10.87		
Males	5.12	3.91	< .05
Females	10.50		
Males, Eye Contact	7.24	1.71	< .20
Males, No Eye Contact	3.65		
Females, Eye Contact	16.18	4.83	< .05
Females, No Eye Contact	6.14		

**Ride offers/passing cars*

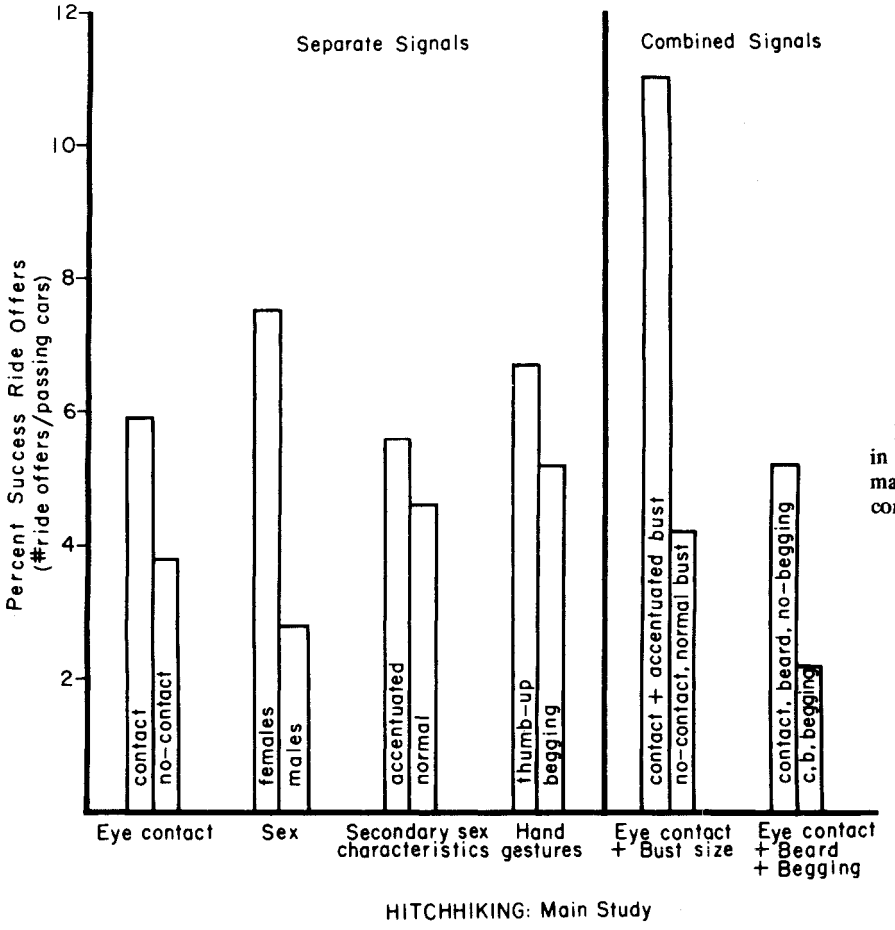

Figure 1. Main Study. Percent success in hitching a ride is graphed for the manipulated signals, separately and in combination.

Main Study

The pilot study suggested relevant variables which were then subjected to experimental manipulation in the main study. These variables included sex, secondary sexual characteristics, eye contact, and hand gestures, all of which play a signaling role in anthropoid social interactions. The secondary sex characteristics were bust size in females and beard growth in males. With fixed facial expression, eye contact was directed either at the driver or along the side of the road. Two hand gestures were employed; either the traditional extended-arm, thumb-up hitchhiking gesture, or a palm-up, begging gesture with extended arm and flexed fingers.

The above variables were arranged in a counterbalanced, Graeco-Latin Square experimental design (Fisher & Yates, 1957). The Latin components consisted of the secondary sex characteristics and the Graeco components were eye contact and hand gestures. The specific procedure involved a hitchhiker standing along the road for a 15-min interval in one of the 12 combinations of variables designated in the design (e.g., bearded male, eye contact, begging gesture). The data were collected by the hitchhiker (who did not accept rides) and by an inconspicuous observer. The recorded data included the number of cars passing the hitchhiker in the 15-min interval, the number of motorists offering rides, and demographic information on the apparent age and sex of the driver, number and ages of passengers, and the type of vehicle.

In 18 hours of observation, rides were solicited from 4,068 cars, obtaining 208 ride offers, for an overall "success" rate of 5.11%. As predicted, sex and eye contact were the variables with the strongest effects. The data are graphically represented in Figure 1. Across all conditions, females received approximately three times as many rides as males ($\chi^2 = 203.50$, $p < .001$). Within each sex, eye contact essentially doubled the rate of ride offers ($\chi^2 = 9.02$, $p < .01$). Secondary sex characteristics showed a statistically nonsignificant *positive* trend ($\chi^2 = 2.12$, $p < .20$). When the latter data were analyzed more specifically, an augmented bust alone did tend to improve ride offerings for females, ($\chi^2 = 1.14$, $p < .30$); the results for bearded males were ambiguous. Although the begging hand gesture regardless of condition showed a statistically nonsignificant *inverse* trend ($\chi^2 = -2.72$, $p < .10$), males in the bearded, eye contact condition were offered significantly fewer rides when begging than when using the traditional gesture ($\chi^2 = -11.00$, $p < .001$). An interesting negative correlation was observed between taller hitchhikers (regardless of sex) and the begging gesture ($\chi^2 = -6.44$, $p < .02$). As expected, female hitchhikers in the augmented bust, eye contact condition received the greatest number of ride offerings–approximately 1 in 10 motorists stopped as compared to the overall rate of 1 in 20.

The demographic data indicate that hitchhikers are most likely to receive ride offers from: (a) males (88.5%); (b) drivers in the age range of 22-30 years (55.8%); (c) motorists without passengers (79.8%), especially children under ten (2.9%); (d) drivers of sedans (81.3%); and (e) drivers of vehicles 3-4 years old (48.1%). Male motorists offered significantly more rides to female ($t = 5.43$, $p < .001$) rather than to male hitchhikers. The relatively few female motorists who offered rides showed no statistically significant sex preference.

DISCUSSION

Analysis of the data indicates, in approximate order of certainty, that (a) motorists are sometimes willing to pick up hitchhikers, but the overall rate is low, (b) females have a much better chance than males of being offered a ride, (c) attempting to make eye contact with the drivers markedly improves the rate of ride offers, (d) rides are most often offered by males, (e) these males are typically in the same general age range as the hitchhiker, (f) females who accentuate bust size improve their rate of ride offers, and (g) some signals, in particular beards, height, the begging gesture, and eating produce variable results depending, in part, upon other signals with which they are paired.

Hitchhiking is possible because humans are social animals whose individual survival in the past has been dependent upon group cohesion and cooperation. Hominid sociability allowed more efficient exploitation of the environment. Hitchhikers are seeking transportation while social contact is probably the primary motivation of stopping motorists. Ride offers are increased when the hitchhiker displays affiliative signals and minimizes agonistic ones. The signals utilized in the present research fall into four categories: positive (e.g., sexuality), negative (e.g., the potential danger of male hitchhikers), imperative (e.g., eye contact and height), and ambiguous (incongrous combinations of signals, e.g., height and begging). The augmented bust accentuated the greater success of females over males in obtaining ride offers. Although Pomazal and Clore (1973) also found that females were offered rides more often than males, their explanation of this finding in terms of the greater dependency of females was not borne out when the female hitchhiker wore a knee brace and an arm sling. The fewer ride offers in the latter situation, however, were consistent with their observation that many drivers acted in a "flirtatious manner" toward normal, but not bandaged females.

In the present studies, the decreasing overall success rate in hitching a ride of 8.33% and 6.88% in the pilot studies and 5.01% in the main study were probably a consequence of changing seasons. The first study was conducted in spring, the second in fall, and the third in winter. Also, visibility of signals-particularly in the case of bust size-was probably hindered by the frequency of rain and the necessity for heavier clothing worn by the hitchhiker.

In addition to sexuality, eye contact between hitchhiker and motorist increased ride offers. Although the obligatory effect of eye contact was successful for male hitchhikers as well, males obviously represented a greater danger to motorists. Female drivers played it safe by infrequently stopping for hitchhikers in general. Motorists with children stopped even less frequently.

An essential component of an effective long range signal is appropriateness. Although a signal may be easily perceived at a distance, it must also be understood in the particular context in which it is utilized. To the extent that a signal is ambiguous–e.g., a tall or bearded hitchhiker engaged in incongruous behavior such as begging or eating–it becomes less effective.

The understanding of a signal requires either a common evolutionary, cultural, or situational history of the participants. Eye contact, sexual characteristics and hand gestures are highly effective displays in hitchhiking, in part, because they are not unique to this situation. Body communication is well rooted in primate evolution, and the selective pressures of survival in the past may be the basis for nonverbal communication in the present. As shown by the hitchhiking model, the effective long range signals were those that maximized interest and safety and minimized danger.

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