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The base-rate of hitch-hiking success and its moderators: A meta-analysis



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ABSTRACT

The inefficient use of automobiles has long become dissonance-provoking for ecologists and financially disadvantaged travellers. Although there are now more than a dozen psychological studies examining hitch-hiking success this is the first meta-analytic summary of the base-rate of hitch-hiking and its moderators. Every study reporting sufficient data to calculate the proportion of cars stopping divided by the amount of cars in total was included regardless of the gender and age of the hitch-hiking confederates and drivers. A random effects approach was used to calculate study weights and resulted in an overall mean proportion of 9.00% (CI = [8.0, 11.0]). Hitch-hikers' gender and publication type were significant moderators while controlling for country and year. Females, 12.57% CI[10.33, 14.81], had a higher base-rate than males, 5.71% CI[4.49, 6.92], while published studies, 10.30 CI [8.49, 12.11], had a higher base-rate than unpublished studies, 4.56 [2.96, 6.16]. All of the results were stable in the face of Trim and Fill as well as a leave-one-out analysis. Future research should continue to research the factors influencing hitch-hiking success (e.g. hitch-hiking mode: either standing at the side of the road signaling by thumb/sign or requesting a ride by asking the drivers) while considering the base-rate to compute the necessary sample size. In practice the base-rate provides hitch-hikers a reasonable estimate of their average success, potentially limiting superstitious mannerisms.

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1. Hitch-hiking base-rate and its predictors

Hitch-hiking and its dangers was mentioned in articles as earlier as the 1930s ([The Drifter, 1932](#)). However, it was neglected in psychological research until the 1960s ([Bryan, 1966](#)). Compared to research examining donation behaviour this has hardly changed. Although more than a dozen primary psychological studies concerning hitch-hiking accumulated over the years, there is still no systematic review or meta-analysis so far. The only available attempt to summarise the current research is an unsystematic, incomplete and narrative review without proper documentation ([Wechner, 2003](#)). In Contrast the author of this meta-analysis is currently undertaking a systematic review and meta-analysis targeting the research question, which interventions (e.g. behaviours, clothing) and variables (e.g. gender) lead to higher odds in hitch-hiking ([Kotz, 2015](#)). Although the base-rate of hitch-hiking is highly informative for hitch-hikers as well as researchers, it has not been examined yet. It is highly informative, because hitch-hikers are given reasonable estimates of their success and researchers are provided with the best estimate for planning future studies.

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1.1. Definition

A hitch-hiker signals strangers, who are currently driving or about to drive a car, that he wants to get a ride in a certain direction (Fiedler, Hoppe, Berninghaus, & Lenhart, 1989; Garner, 2008). According to this definition, hitch-hiking from the driver's perspective is intended, cooperative behaviour. His behaviour is cooperative because it has positive consequences for the hitch-hiker (West, Griffin, & Gardner, 2007). His behaviour is intended, because he selected it for its consequences (Scott-Phillips, 2008). It is therefore not an action, which is randomly and unintended to the hitch-hikers' advantage (West, Mouden, & Gardner, 2011). Cooperative behaviour can be altruistic as well as mutually beneficial (West et al., 2007). The behaviour is altruistic if the positive outcomes for the hitch-hiker are intended and costs arise for the driver. The behaviour is mutually beneficial if positive outcomes are intended for both the hitch-hiker and the driver. Theoretically, both the definitions and the terms of cooperative behaviour, altruism and mutually beneficial behaviour are controversial (Fischer, Asal, & Krueger, 2014, chap. 4; Levine & Manning, 2014; West et al., 2011).

In practice two modes of hitch-hiking can be differentiated (Müller, 2013). The hitch-hiker can use different approaches to signal the driver that he wants to get a ride: (1) He can stand at the side of the road and signal via his thumb or a sign or (2) he can ask people if they will take him. Hitch-hiking by thumb the hitch-hiker turns toward the road while he is extending the arm and thumb in its direction. The same basic outline applies to hitch-hiking with a sign, which is held about breast high and features his next travelling goal. When asking people, the hitch-hiker is asking drivers who have stopped or parked, e.g. at red traffic lights, at petrol stations or motorway service areas.

1.2. Moderators

The mean proportion in each study might not only be influenced by the actual base-rate of cooperative behaviour in hitch-hiking but also by systematic differences between and within studies, e.g. the hitch-hiking mode, the gender of the hitch-hiker and the publication type.

1.2.1. Moderator: Hitch-hiking mode

The influence of hitch-hiking mode is predicted by two different theoretical approaches: The empathy-altruism hypothesis and the model of bystander intervention. The empathy-altruism hypothesis predicts that the probability of cooperative behaviour is determined by the helper's feeling of empathy and the ease of escape (Batson, Duncan, Ackerman, Buckley, & Birch, 1981; Piliavin & Charng, 1990). The theory makes two differential predictions: If escaping is difficult cooperative behaviour is generally high. If escaping is easy the probability of cooperative behaviour is rising with increasing feelings of empathy. Experimentally the feelings of empathy were manipulated by the factor of similarity in appearance. The difference of the modes of hitch-hiking is in the ease of escape. If the hitch-hiker is signalling the driver while standing at the side of the road, the driver can escape easily. If the hitch-hiker is asking drivers who have stopped or parked, escape is more difficult than in the former mode. Therefore, according to this theoretical approach a difference between modes of hitch-hiking is predicted.

The same difference is predicted by the model of bystander intervention. It is a sequential model, which consists of five steps: (1) Notice the event, (2) perceive as critical, (3) feel responsible to act, (4) having sufficient competence to act and (5) being able to implement the necessary action. In each of these steps cooperative behaviour can be prevented by different factors: (1) In the first phase being in a hurry or distracted might prevent the person to notice the event. (2) In the second phase other people ignoring the necessity for cooperative behaviour might lead a potential helper to misinterpret the situation in a way making help unnecessary or even unwanted. (3) In the third phase a lot of other people being around might lead the person to conclude that another person might be more skilled and willing to help and therefore their help is not needed. (4) In the fourth phase there might be social evaluation concerns, which might lead to a non-intervention. (5) And in the fifth phase the possibility to implement the necessary behaviour might not present itself. While all of these phases make differential predictions, which might be manipulated in an experimental investigation of hitch-hiking the mode of hitch-hiking is especially influencing the first three phases of the model. If the hitch-hiker is requesting a ride from a driver who has stopped due to a traffic light or is parking, the driver has to notice the event, perceive it as critical and feels more responsible, because he is directly addressed by an individual as an individual. If the hitch-hiker is, however, signalling standing at the side of the road the driver might not notice him looking only on the road, might be distracted by passing cars, might not know the gesture for hitch-hiking and therefore not interpret the event as critical, or might feel less responsible as, because he is not directly addressed by an individual as an individual. Therefore the same difference in the modes of hitch-hiking as in the empathy-altruism hypothesis is predicted: Asking a driver should lead to a higher base-rate than signalling from the side of the road.

1.2.2. Moderator: Hitch-hikers gender

The influence of gender on cooperative behaviour was first analysed and theoretically grounded in Eagly's and Crowle's (1986) meta-analysis, which proposes the gender role theory. Gender role theory describes cooperative behaviour of woman and men as diametrically opposed the dimension of familiarity with the person in need of help. Women are according to this theory especially concerned with the personal and emotional needs of others in their close relationships. Men however, are more likely to cooperate if their behaviour is heroic or chivalrous. Their behaviour is heroic if they have

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