

# Observing gender differences in crossing behaviour – crossing during the red man phase

*by* Eleanor Nightingale

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## Observing gender differences in crossing behaviour – crossing during the red man phase

### Abstract:

This study aimed to test whether the gender of a pedestrian made them more likely to cross during the red man phase. Seventy-eight participants were observed unobtrusively at a pelican crossing, with researchers recording when participants crossed the road (during the red or green man phase) and their perceived gender. It was found that gender did not significantly affect whether pedestrians crossed safely or not but the current study's findings did corroborate earlier research and has provided reassurance that previous results gathered are valid and reliable.

### Introduction:

Pedestrians are involved in approximately 13% of all traffic collisions in the United Kingdom. Previous research indicates that gender, among other influences such as age, personality and driving status, is a major contributing factor to unsafe crossing behaviour. Government statistics (2014) have revealed that, out of 24,748 pedestrian collisions, approximately 56% (13,898) were male pedestrians and 44% (10,850) were female pedestrians.

Moreover, Rosenbloom (2009) found significant gender differences in crossing behaviour; male pedestrians, crossed more frequently during the red man phase than females. Of the 1392 participants, only 76 actually crossed on the red man phase. This is further supported by Yagil (2000) where a significant difference was found between men and women crossing on a 'do not walk' sign, with men doing so more frequently.

In addition, women perceived there to be a greater risk of being run over than men (Holland & Hill 2007). In a later study conducted by Holland & Hill (2010), it was found that men made more unsafe choices than women, with female drivers making less unsafe crossings than male drivers.

Findings from Brosseau, Zangenehpour, Saunier, & Miranda-Moreno (2013) revealed that men generally tend to commit more crossing violations (crossing during the red man phase) than women.

This is further supported by Diaz (2002) who reported that men commit more frequent violations of traffic rules than women do and are more likely to cross in risky situations. Zhou, Liu, Wang, & Zhang (2013) also revealed there was a negative correlation between gender and a pedestrian's choice of crossing during the red man phase.

Consistent gender differences were also found by Yagil (2000) with women's perception of their susceptibility to an accident from crossing unsafely being higher than men. Their perception of danger in regards to unsafe crossing was also different; men believed more so than women that crossing signals are designed for children and the elderly. This is supported by Rosenbloom & Wolf (2002a) and Rosenbloom & Wolf (2002b) who indicated that high sensation-seeking levels could predict reckless behaviour in terms of crossing roads.

Together, these studies demonstrate how gender is a major factor affecting crossing behaviour and when pedestrians cross the road, either during the red man phase or the green man phase. In the present study, we observed participants covertly to determine the extent of gender on crossing behaviour at a pelican crossing. The aim was to test whether the gender of a pedestrian made them more likely to cross during the red man phase. The importance of this study is how it replicates previous research to corroborate earlier findings and provides reassurance that previous results gathered are valid and reliable. It was hypothesised that male participants would be more likely to cross during a red man phase at a pelican crossing than female participants.

## Method:

### *Design*

Research was conducted unobtrusively due to the covert nature of the observation. A 2x2 design was used, with the independent variable (IV) being the gender of the participant (male or female) and the dependant variable (DV) being whether the participant crossed when the green man phase (safe) or red man phase (unsafe) was present. If participants started crossing on the red man phase, which then proceeded to change to green halfway through crossing, it would still be considered as an unsafe crossing.

### Participants

All 78 participants (41 male and 37 female) were recruited opportunistically, with every male and female pedestrian who approached the crossing during the allotted study time being counted. This included adolescents/older children who could act autonomously and make their own decisions on when to cross the road and therefore excluded younger children and babies.

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### Procedure

The observation was conducted by three researchers to confirm operational definitions for each condition and to ensure inter-rater reliability. The study took place outside Horsforth train station at a nearby pelican crossing on a Tuesday afternoon for one hour at around 2:45pm; the time and location were considered an appropriate setting due to the numerous students, residents and adolescents who were leaving school/home during the study period. The researchers were stood near the crossing but in a covert manner to ensure that the participants natural behaviour wasn't compromised. As the participants crossed the road, it was recorded whether they crossed the road 'safely' or 'unsafely' and what gender they were. One record table was used by the three researchers, with them all approving the category that each participant would fit into.

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### Results:

The number of males and females who crossed on the red/green man phase are shown in Figure 1.

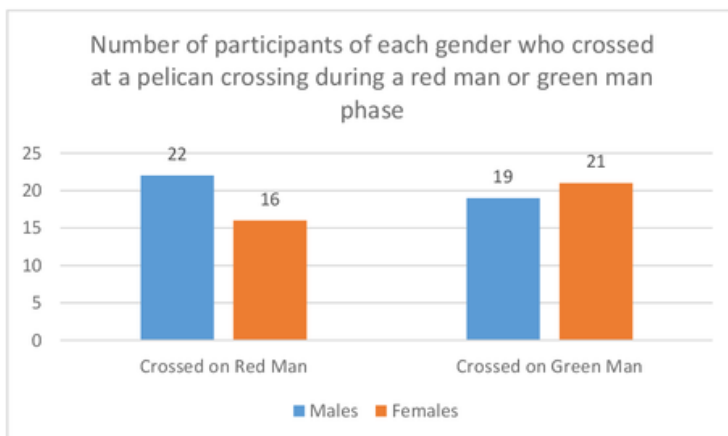


Figure 1: Number of participants of each gender who crossed at a pelican crossing during a red man or green man phase. *Participants crossing behaviour as distinguished by gender.*

There was not a significant association between gender of a pedestrian and whether they crossed safely or unsafely  $\chi^2(1, N = 78) = .823, p = .36, \text{Phi } W = .104$  indicating a small effect. Horsforth's population showed that 52% were females and 48% were males meaning the expected values of the study were changed to 41 (females) and 37 (males). From the frequencies observed (Fig. 1) and the standardised residuals, it is clear that more males crossed on the red man phase than expected and fewer males crossed at the green man phase than expected by chance. More females crossed at the green man phase than expected and fewer females crossed at the red man phase expected by chance. The observed frequencies suggest that males are more likely to cross on a red man phase whereas females are slightly more likely to cross on a green man phase at a pelican crossing.

#### Discussion:

In the present study we observed participants covertly to determine whether the gender of a pedestrian made them more likely to cross during the red man phase and one main finding was apparent. As predicted, male participants were more likely to cross at the pelican crossing during the red man phase than women. This result supports the original hypothesis and previous findings from Cresswell and others and therefore strengthens the notion that males cross the road unsafely more frequently than females.

One possible reason behind males' choice to cross the road unsafely could be down to personality factors. Rosenbloom & Wolf (2002a) and Rosenbloom & Wolf (2002b) indicated that sensation-seeking levels could predict reckless behaviour in terms of the crossing road. This is further supported by Rosenbloom (2003) who revealed that people who rate as high sensation seekers reported higher risk taking behaviours. This suggests that men are more likely to have a high risk seeking personality than women and would therefore explain why women cross less on the red man phase than men.

Furthermore, the varying perception of risk, in regards to unsafe crossing, between genders could also explain the findings of the present study. Women's perception of their susceptibility to an

accident from crossing unsafely has been found to be higher than men, with men also believing that crossing signals are designed for children and the elderly (Yagil, 2000). The raised perception of risk about crossings to women and the lowered perception of importance of crossings to men could explain why men cross more during the red man phase than women.

This knowledge of high sensation-seeking personalities and the low perceived risk of crossings has important implications for campaigns about crossing the road safely; advertisements should not only be directed at specific age groups, such as children and the elderly, but gender too. For example, Think! (THINK! Road safety: Road safety, n.d.) is a government run campaign that provides road safety information for road users and has produced many advertisements addressing the importance of good road safety behaviour. However, the majority of their pedestrian campaigns, such as the Green Cross Code Man and the Hedgehog family, are focused primarily at children. Men are overlooked in these advertisements and therefore need to be addressed to ensure the safety of everyone.

Since the findings from this present study support that of previous research, it is indicated that the observed sample behaved naturally and were not affected or aware of the researchers present. This therefore suggests that the observation was fully covert and the results found were reliable. However, there was not a significant association found between gender and crossing behaviour which suggests that some participants could have been affected by demand characteristics and therefore didn't cross during the red man phase.

Currently, there is an abundance of research on children and crossing behaviour but future research into the effects of gender on crossing behaviours in children would help extend and progress the present findings. The results of the current study show that gender does have a contributing role in crossing behaviour, despite there not being a significant effect. These results have implications for road safety campaigns and suggest that their advertisements should be directed at men to help reduce the amount of pedestrian collisions and ensure that everyone crosses the road safely.

#### Reference List:

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- Zhou, Z.-P., Liu, Y.-S., Wang, W., & Zhang, Y. (2013). Multinomial Logit model of pedestrian crossing behaviors at Signalized intersections. *Discrete Dynamics in Nature and Society*, 2013, 1–8. doi:10.1155/2013/172726

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## GRADEMARK REPORT

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FINAL GRADE

65 / 100

GENERAL COMMENTS

### Instructor

#### Abstract

Some more details needed - what was your hypothesis, where was the study conducted?

#### Introduction

This section could have been organised more clearly - similar studies (e.g. those which all demonstrate a similar effect) should be grouped together so it is easier to follow your argument. Extra details needed about some studies.

#### Method

reasonably detailed, some aspects of the procedure need explaining more carefully.

#### Results

Good to see you refer to Figure 1 (i.e. not graph/chart). Good reporting of chi and phi - you could explain what you mean by small effect.

#### Discussion

Some nice points made here about risk taking etc, but more explicit links need to be made between your findings and this suggestion. Some contradiction in terms of how you describe your findings (whether there was a gender difference or not).

APA - good overall - really nice to see a decent number of references, but ensure they are formatted consistently at the end (space them out)

Design - appropriate to test your hypothesis

Style - nice overall, a few lapses of clarity.

Dr Christine Wells

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PAGE 1

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QM

### Vague

Unclear:

When making a point in one of your body paragraphs, one of the most common mistakes is to



not offer enough details. A paragraph without much detail will seem vague and sketchy. A paper is always strengthened when your claims are as specific as possible, The more detailed evidence you offer, the more reference points your reader will have. Remember that you are communicating your argument to a reader who has only your description to go by. Someone who reads your essay will not automatically know what you mean to express, so you have to supply details, to show the reader what you mean, not just tell him or her.



### **Comment 1**

unnecessary detail



### **Comment 2**

where was this study conducted?



### **Comment 3**

location?



### **Comment 4**

more detail needed about this study



### **Comment 5**

again more detail needed



### **Comment 6**

shouldn't this be a couple of paragraphs up with similar studies?

PAGE 2

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### **Comment 7**

relevance to gender?



### **Comment 8**

don't write 'we' - write in the third person throughout



### **Comment 9**

be more concise



### **Comment 10**

don't say this here - it would be more appropriate to make this sort of point in the discussion



### **Comment 11**

good level of detail

PAGE 3

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### **Comment 12**

good level of detail



### **Comment 13**

detail needed



### **Comment 14**

could explain more clearly

PAGE 4

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### **Comment 15**

is this meant to be here?



### **Comment 16**

this is unclear



### **Comment 17**

good to see these mentioned, but explain further



### **Comment 18**

but it was non-significant



### **Citation Needed**

Cite Source:

Please use the link below to find links to information regarding specific citation styles:

[http://www.plagiarism.org/plag\\_article\\_citation\\_styles.html](http://www.plagiarism.org/plag_article_citation_styles.html)



### **Comment 19**

Would help to cite other research evidence of higher levels of risk taking in males

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### **Awk.**

Awkward:

The expression or construction is cumbersome or difficult to read. Consider rewriting.



### **Comment 20**

good linking sentence



### **Comment 21**

contradicts what you say at the beginning of this section



### **Citation Needed**

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Cite Source:

Please use the link below to find links to information regarding specific citation styles:  
[http://www.plagiarism.org/plag\\_article\\_citation\\_styles.html](http://www.plagiarism.org/plag_article_citation_styles.html)



### **Comment 22**

why? this is quite a leap

**ABSTRACT (5%)**

4 / 8

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ABJECT FAIL (<30) (1)	Either absent or disorganised and uninformative.
FAIL (30-39) (2)	Lacks organisation and is confused.
3RD (40-49) (3)	Shows evidence of organisation and covers some of the relevant information.
<b>2.2 (50-59) (4)</b>	<b>Organised and covers most of the relevant information.</b>
2.1 (60-69) (5)	Organised, succinct and comprehensive.
1ST (70-79) (6)	Well organised, succinct and comprehensive.
OUTSTANDING 1ST (80-89) (7)	Very well organised, succinct and comprehensive.
EXCEPTIONAL 1ST (90-100) (8)	Exceptionally well organised, succinct and comprehensive

**INTRODUCTION (15%)**

4 / 8

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ABJECT FAIL (<30) (1)	No introduction at all.
FAIL (30-39) (2)	Introduction section, but no rationale or no basis in previous work.
3RD (40-49) (3)	Attempt to provide a rationale for the study, although weak.
<b>2.2 (50-59) (4)</b>	<b>Rationale provided and it is largely clear how the study follows on from previous work.</b>
2.1 (60-69) (5)	Rationale follows on logically from the literature review and extends previous work.
1ST (70-79) (6)	Very clear and convincing.
OUTSTANDING 1ST (80-89) (7)	Extremely clear, effective and convincing.

EXCEPTIONAL 1ST (90-100) (8) Exceptionally clear, effective and convincing.

## HYPOTHESES (5%)

5 / 8

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ABJECT FAIL (<30) (1) Absent or seriously flawed.

FAIL (30-39) (2) Presented but with no link to previous studies.

3RD (40-49) (3) Presented, but no, or unconvincing explanation.

2.2 (50-59) (4) Presented, with some explanation.

2.1 (60-69) (5) **Clear, precise and explained.**

1ST (70-79) (6) Explicit, clear and fully explained.

OUTSTANDING 1ST (80-89) (7) Explicit, very clear and fully explained

EXCEPTIONAL 1ST (90-100) (8) Extremely clear and fully explained.

## METHODOLOGY (20%)

5 / 8

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ABJECT FAIL (<30) (1) Very poor. Very difficult to understand how the study was conducted.

FAIL (30-39) (2) Poor. Difficult to see how study was conducted.

3RD (40-49) (3) Some description of the main details of the study. Would allow a broadly similar study to be conducted.

2.2 (50-59) (4) Generally good and provides details of most major and minor aspects.

2.1 (60-69) (5) **Very good with clear and explicit accounts of all major and most minor details.**

1ST (70-79) (6) Accurate with complete attention to detail, while remaining concise.

OUTSTANDING 1ST Flawless. Complete attention to detail, while remaining concise.

(80-89)

(7)

EXCEPTIONAL 1ST Flawless. Complete attention to detail. Entirely concise.

(90-100)

(8)

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## RESULTS (20%)

5 / 8

ABJECT FAIL (<30) Either no analysis, or inappropriate analysis.

(1)

FAIL (30-39) Unclear and reported incorrectly.

(2)

3RD (40-49) Shows a basic understanding of the results and how to report them.

(3)

2.2 (50-59) Correct and mainly clear. Some evidence of insight.

(4)

2.1 (60-69) **Clear, correct and largely concise. Reasonably insightful.**

(5)

1ST (70-79) Clear and correct with insight, conciseness, and sophistication.

(6)

OUTSTANDING 1ST Very high standard of clarity, insight, conciseness, correctness and sophistication.

(80-89)

(7)

EXCEPTIONAL 1ST Professional standard of clarity, insight, conciseness, correctness and sophistication.

(90-100)

(8)

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## DISCUSSION (20%)

5 / 8

ABJECT FAIL (<30) No discernible account.

(1)

FAIL (30-39) Superficial account of some basic issues.

(2)

3RD (40-49) Some discussion. Descriptive with little evaluation. A limited account of some basic issues.

(3)

2.2 (50-59) Reasonably good account but slightly basic and unsophisticated.

(4)

2.1 (60-69) **Very good account of the theoretical and practical implications and limitations of the findings. Good summary.**

(5)

1ST (70-79) Insightful analysis. Very sophisticated. Very effective.

(6)	
OUTSTANDING 1ST (80-89) (7)	Searching and critical analysis. Outstanding account of theoretical and practical implications and limitations of the findings.
EXCEPTIONAL 1ST (90-100) (8)	Original and searching critical analysis. Comprehensive and highly effective.

#### DESIGN (7%)

5 / 8

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ABJECT FAIL (<30) (1)	Entirely misconceived. Severe and fundamental weaknesses.
FAIL (30-39) (2)	Basic flaws. Very little evidence of methodological understanding. Inappropriate way of testing the hypothesis.
3RD (40-49) (3)	Basic and ill-conceived. A limited way of testing the hypothesis
2.2 (50-59) (4)	Sound although not novel, original or ground breaking. An appropriate way of testing the hypothesis.
2.1 (60-69) (5)	<b>Novel, creative and sophisticated, although not necessarily particularly original or ground breaking. A very good way of testing the hypothesis.</b>
1ST (70-79) (6)	Excellent in terms of its originality and has a design that is novel, creative and sophisticated. An excellent way of testing the hypothesis.
OUTSTANDING 1ST (80-89) (7)	Outstanding in its originality and has a design that is novel, creative and sophisticated. Outstanding way of testing the hypothesis.
EXCEPTIONAL 1ST (90-100) (8)	Exceptional in its originality and has a design that is novel, creative and sophisticated. Optimal way of testing the hypothesis.

#### APA FORMAT (4%)

6 / 8

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ABJECT FAIL (<30) (1)	Inadequate or absent.
FAIL (30-39) (2)	Inadequate.
3RD (40-49) (3)	Limited referencing and/or adherence to APA style.
2.2 (50-59) (4)	Largely consistent and accurate, including in-text citations and the format and content of the references list.

2.1 (60-69) (5)	Consistent and accurate, including in-text citations and the format and content of the references list.
1ST (70-79) (6)	Excellent, including in-text citations and the format and content of the references list.
OUTSTANDING 1ST (80-89) (7)	Flawless, including in-text citations and the format and content of the references list.
EXCEPTIONAL 1ST (90-100) (8)	Flawless, including in-text citations and the format and content of the references list.

## STYLE (4%)

5 / 8

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ABJECT FAIL (<30) (1)	Grossly inadequate and unclear presentation. Severely impaired communication. Error-strewn.
FAIL (30-39) (2)	Inadequate and unclear presentation. Impaired communication. Error-strewn.
3RD (40-49) (3)	Adequate, but awkward expression throughout with little clarity. Poor delivery, pace and audience engagement.
2.2 (50-59) (4)	Some lapses of clarity. Some expression is ineffective. Satisfactory delivery, pace and audience engagement.
2.1 (60-69) (5)	<b>Clear and coherent. Good delivery, pace and audience engagement.</b>
1ST (70-79) (6)	Fluent and accurate with great clarity and coherence. Mostly confident delivery, pace and audience engagement.
OUTSTANDING 1ST (80-89) (7)	Professional and sophisticated with great clarity and coherence. Excellent, controlled, confident delivery, pace, and audience engagement.
EXCEPTIONAL 1ST (90-100) (8)	Professional and sophisticated with great clarity and coherence. Excellent, controlled, confident delivery, pace, and audience engagement.