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To text or not to text - Drivers' interpretation of traffic situations as the basis for their decision to (not) engage in text messaging

Tibor Petzoldt [1*], Katja Schleinitz [2,3]

[1] Traffic and Transportation Psychology, TU Dresden, Hettnerstrasse 1, Dresden, Germany
[2] Cognitive and Engineering Psychology, TU Chemnitz, Wilhelm-Raabe-Strasse 43, Chemnitz, Germany
[3] TÜV | DEKRA arge tp 21, Wintergartenstraße 4, Dresden, Germany
[*] tibor.petzoldt@tu-dresden.de

Abstract: Texting while driving is more prevalent than ever. Still, at the same time, drivers seem to consciously select and reject certain traffic situations as appropriate for texting. However, it is unclear which situational characteristics drivers consider when making this decision. Aim of this study was to get a better understanding of drivers' reasoning when deciding to (not) text, focussing on their interpretation of the traffic context. Forty-one drivers were confronted with 43 short video sequences showing different traffic situations from a driver's perspective. They were asked to indicate whether they would be willing to text in the presented situation and provide information regarding the situational characteristics that played a role in their decision. While the level of agreement between participants was high for certain situations (e.g., nearly all were willing to text when stopped at a red light), there was a considerable number of scenarios for which opinion was split, hinting at clear differences in the subjective assessment of these situations. Participants' explanations for their decision to text, as uncovered by qualitative content analysis, mainly referred to aspects that might indicate low attentional demand, low handling demand, as well the idea that there would be some margin for error.

1. Introduction

The prevalence of texting while driving is on the rise. Already ten years ago, 72.5% of a group of surveyed young American drivers reported that they would text and drive at least some of the time [1]. Fourteen percent of British drivers admitted to text at least weekly [2]. In Germany, 14% admitted to read, and 8% to write text messages (hand-held) [3]. From naturalistic driving data, we know that drivers from various European nations devote about 2% of their driving time to handheld interaction with their mobile phone [4], while observations of American drivers uncovered that they were engaged in texting in about 2% of all analysed baseline (i.e. non-critical) driving situations [5].

Unfortunately, texting, with its strong visual component, is a task that has the potential to interfere with the primary task of driving. Not surprisingly, various studies have reported negative effects of texting on driving performance [6]. It has been found that texting while driving might, for example, result in longer reaction times [7], [8], in an increase in lane deviations [7], [9], [10] and in a higher crash risk [7], [8].

One shortcoming of most of these investigations, however, is the fact that participants usually did not get the chance to decide for themselves whether to text or not. Instead, as many of these studies were experimental in nature (e.g., in a driving simulator environment), participants were confronted with different traffic situations, and required to text at a predefined moment (e.g., after the passage of a certain waypoint). While such an approach is fully reasonable when considering the need for standardisation and control in experimental studies, it neglects the possibility that a driver, although in general willing to text, might decide against the engagement in a secondary task in the specific traffic situation in which he or she is put experimentally.

Indeed, there are clear indications that drivers adapt their general secondary task engagement to the driving context. Drivers avoid engaging in secondary tasks (e.g., using mobile phones, MP3 players or navigation systems, eating/drinking, interaction with passengers) when they drive in the dark [11], [12], in dense traffic [11], [12], or under inclement weather conditions [12]. Such effects can be explained as being the result of drivers' behavioural self-regulation. According to Fuller [13], drivers strive for a specific, self-defined level of preferred task difficulty. One way to reach (or keep) that level would be to select situations for texting in which (subjective) task difficulty is low, and avoid situations for texting in which (subjective) task difficulty is already at the preferred level. Starting to text in a situation that already puts a high demand on the driver would result in an increasing deviation from that preferred level, and would therefore, according to the model, be unlikely.

With regard to texting, comparable findings are rare. One of the few available investigations is an analysis of naturalistic driving data [14], which found that "drivers were more likely to perform visual–manual phone tasks when standing still". However, while such an analysis provides a rather objective view of the characteristics of situations in which drivers are willing to text (with trained observers analysing the situations), it remains unclear which characteristics the drivers themselves considered relevant for their decision to (not) text. A notable exception is the study of Hancox and colleagues [15], who presented participants with video clips of traffic situations of varying complexity, asked them to indicate their willingness to engage in different secondary tasks (texting among them), and allowed them to freely provide information with regard to their thought processes ("think aloud"). Unfortunately, the findings of the "think aloud" portion of the study were only reported anecdotally, to offer some additional insight into the drivers' reasons for (not) texting.

The aim of this study was therefore to get a better understanding of the drivers' reasoning when deciding to (not) text, focussing on their interpretation of the traffic context

regarding its suitability for texting. In our video based interview study, we, to some degree, followed the approach of Hancox et al., however, put a stronger focus on the participants' explanations for their decision to (not) text, both in the design of the study and the analysis of the data, which is mostly explorative.

2. Method

2.1. Participants

As a first step, we distributed a screening questionnaire to identify potential participants that have at least some experience with regard to texting while driving. The screener was sent to drivers in the professorship's (Cognitive and Engineering Psychology, TU Chemnitz, Germany) participant pool, as well as to TU Chemnitz mailing lists. Information relevant for the selection process were last year's mileage (in km) and the reported frequency of texting while driving (as well as aspects such as gender and age to draw a balanced sample). Out of 71 candidates, fourty-one drivers (19 female, 22 male), with a mean age of 32.7 years (from 19 to 63), and 14.5 years of driving experience (on average) were chosen for participation. Selected participants had driven at least 12,000 km in the last year (mean 30,146 km), and reported to text at least once every ten hours of driving.

2.2. Material

We recorded a wide range of traffic situations (German traffic environment) from a driver's point of view, using a camera (1920x1080 px, 25 fps) mounted on the windshield inside a vehicle. Out of that collection, we selected traffic situations for use in the study based on road type (motorway, rural, urban) and complexity of the situation. According to Fastenmeier [16], the complexity of a traffic situation is a combination of the situation's information processing requirements and its demands regarding the handling of the vehicle. Fastenmeier provides a classification scheme in which aspects such as the presence of intersections, traffic controls, visibility and weather conditions, traffic density, and the duration of the situation are considered as relevant characteristics. An example of a situation of low complexity would be a prolonged section of straight road without any intersections, e.g. on limited access roads such as the Autobahn. A situation of high complexity would be a drive through an urban area with lots of intersections without traffic control devices, requiring the driver to pay increased attention to other road users. Following this classification scheme, nine of our selected situations were considered of low complexity, nine of medium complexity, and eight of high complexity.

Another 17 situations were added to the selection because they depicted situations known to be safety relevant and of frequent occurrence, but did not fit into the scheme proposed by Fastenmeier (e.g., driving through a tunnel, overtaking a cyclist). In total, we selected 43 situations for our study (see Appendix for an overview). The final cuts of the videos were between 6 and 18 s in length, and showed the current driving speed at the bottom left of the video (see Figure 1).

Fig. 1. *Screenshot of one of the traffic situations (urban road, medium complexity).*

2.3. Procedure

Before the actual interview began, participants were provided with a short introduction to the study. They were informed (and agreed) that video and audio material would be recorded. After that, they were required to write a text message with an app of their choice, using their own phone, the way they would do it when they were driving. This allowed us to assess their usual input strategy (how do they hold the phone, which fingers do they use, do they use autocomplete, etc.).

After that, participants were instructed with regard to their main task in the study. They were supposed to view the videos of the different traffic situations (order counterbalanced across participants), and consider themselves being the driver of the car. For each situation, they were asked whether they would be willing to start writing a text message under the depicted circumstances or not (binary yes/no), and were required to specify what situational characteristics had an influence on their judgement. Furthermore, participants were asked to clarify what would need to be different in the respective traffic situation in order for them to revise their judgement (i.e., if they reported to be unwilling to text in the shown situation – "What would need to be different / change in order for you to be willing to text in that situation?", and vice versa). In addition, for each situation, participants were required to estimate how crash risk would change as a result of texting. Participants responded verbally to the interviewer's questions. All responses were recorded.

At the end of the interview, participants provided general information about their texting behaviour, as well as demographic information. On average, the whole session took about 60 min (with variations from 35 min to 90 min).

2.4. Data analysis

We collected about 3,000 min of audio recordings. All recorded responses were transcribed verbatim. It should be noted that not all the participants' statements were fully plausible with regard to the question they were asked (e.g., sometimes, participants explained how they would adapt their driving behaviour to accommodate texting in the presented situation, or just broadly stated that the situation would be safe without going / being able to go into specifics). Nevertheless, all statements, regardless of informational value, were transcribed, which resulted in a total of 1,996 arguments for texting in the different situations, and 2,648

arguments against texting. The method of qualitative content analysis [17] was used to classify the arguments, through multiple steps, into different categories. These argument categories were then analysed with regard to their frequency of occurrence. The same procedure was used to analyse the statements regarding the situational aspects that would need to change in order for the participants to revise their initial decision to (not) text (1,256 and 1,497 arguments, respectively).

3. Results

3.1. General texting behaviour

More than half of our participants reported to read or write text messages at least once per hour of driving. Given that we deliberately selected drivers for participation who had indicated a willingness to text, this is not surprising. Still, it should be noted that, on a descriptive level, reading messages seemed to be more prevalent than writing, which can be seen as an indicator of behavioural adaptation.

When looking at how they text while driving, we found that 59% of our participants used their right thumb for input, while 22% used the right index finger, and 12% both thumbs. Only 7% used the left hand. About half of our participants (49%) put in every single letter, whereas 43% used autocomplete in some way. Only 7% used a swipe function.

3.2. Responses to the presented situations

On average, our participants indicated a willingness to text in 18.5 out of our 43 situations (about 43 %, SD = 6.5). The most cautious participant considered only 6 situations suitable for texting, while the two most willing participants judged 34 situations as appropriate (see Figure 2).

We found considerable variations between the different situations regarding participants' willingness to text. While being stopped at a red light was deemed suitable for texting by nearly all participants (98%), scenarios such as a narrow, winding rural road were rejected unequivocally. Complexity as defined through the Fastenmeier scheme appeared to play a certain role for the participants' judgement, as the situations that were categorized as highly complex went with a mean "indicated willingness to text" rate of 22.3%, the ones of medium complexity with a rate of 39.0%,
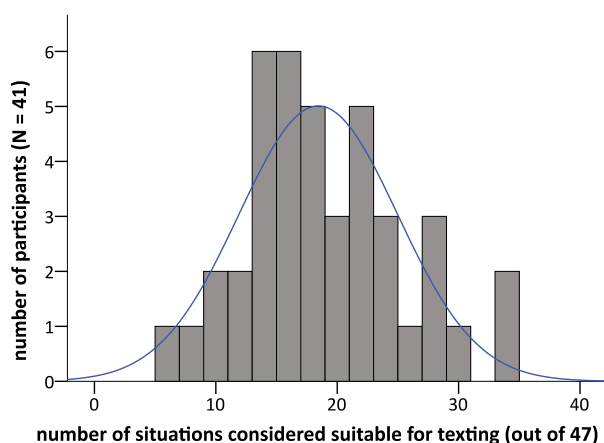
and the low complexity situations with a rate of 61.8%. However, it should also be noted that there were substantial variations within these categories (Figure 3), at times ranging from 0 to more than 90% of drivers willing to text in different situations of the same level of complexity.

When asked to indicate the increase in crash risk in a certain situation if texting would occur, participants reported an overall risk increase (across all situations) of 48.2% (SD = 18.1). Not surprisingly, situations in which most participants indicated a willingness to text were considered rather safe, whereas situations in which only few (or even none) participants were willing to text went with much higher risk increase ratings (Figure 4). In general, there was a very strong relationship ($r = -.884$, $p < .001$) between participants' stated (un)willingness to text in a specific situation, and their estimation of the increase in crash risk as a result of texting in that situation.

In Figure 5, the different categories of arguments in situations which participants considered suitable for texting are presented. One frequently provided argument was the absence of other road users, or the fact that their behaviour would be highly predictable. An example statement would be "*Well, because there is hardly any traffic.*". Others also included the idea that there was a lot of "empty" space ahead and around the vehicle, e.g. "*Distance [to lead vehicle] has not decreased, must be 200 to 300m. Left and right no car, which means I can freely drive, and for some time, for the next few seconds, there would be no changes in that regard, so I could devote some attention to my mobile phone, but only for a moment, i.e. short messages.*" (this statement included arguments of two categories, "no other road users" as well as "space"). The fact that lighting and the environment provided
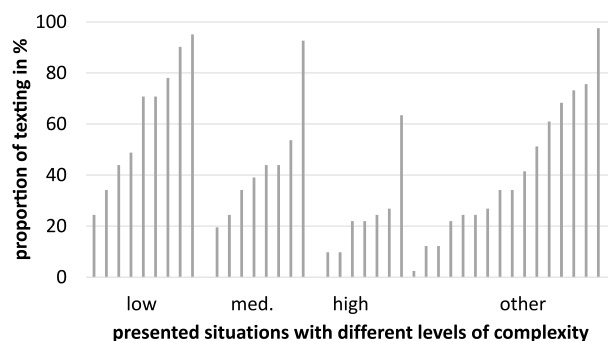
Fig. 3. *Proportion of participants willing to text in a certain situation (in ascending order), clustered by level of complexity*
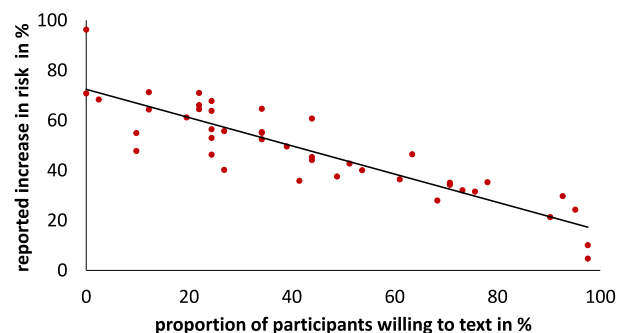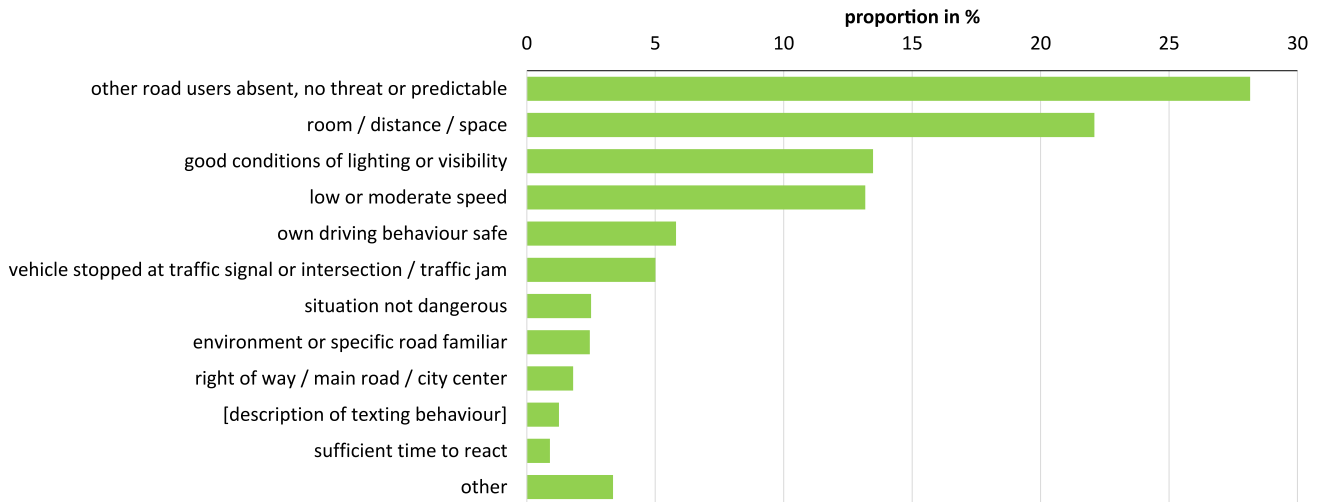
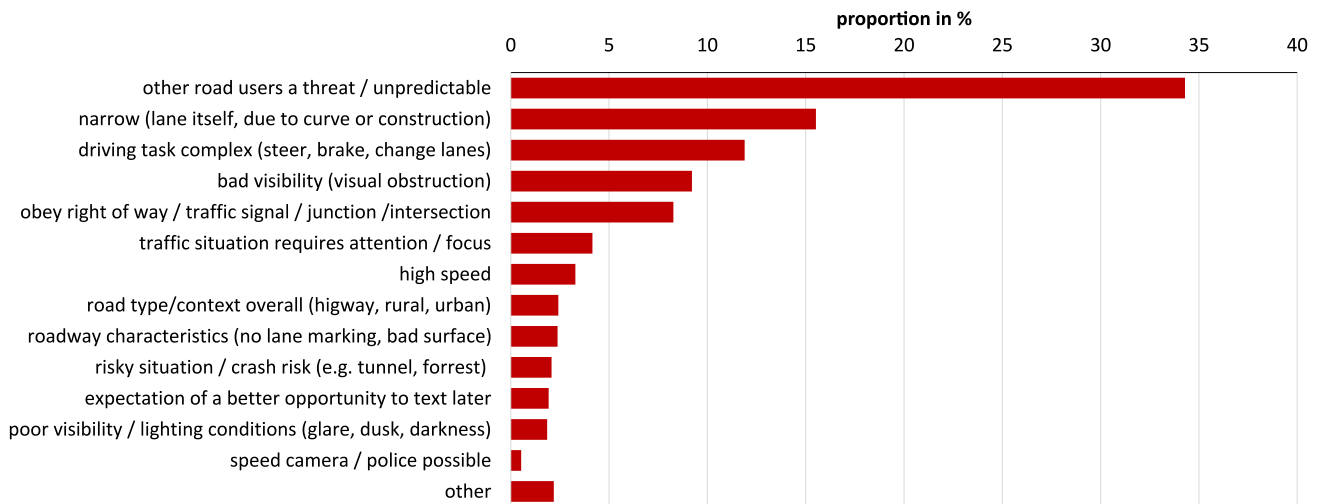**Fig. 4.** *Relationship between willingness to text and estimated increase in crash risk due to texting*

Fig. 2. *Histogram showing participants' willingness to text across different situations.*

proportion in %

Fig. 5. Categories for arguments provided by participants as explanations for why they would be willing to text in a certain traffic situation.

proportion in %

Fig. 6. Categories for arguments provided by participants as explanations for why they would NOT be willing to text in a certain traffic situation.

a clear view of what was to occur ahead was also considered relevant, e.g. "*Good view, sun maybe a little low, and because of the trees there are some shadows, but it would have been okay for a short message*". A perceived moderate or low level of speed, just as the vehicle being stopped completely, also appeared to increase the willingness to text. An exemplary statement would be "*This is a typical situation, in which I would write a quick message, because I have just stopped at the red light, and don't presume that it will turn green immediately.*".

The arguments provided against texting in a certain situation largely mirror the ones provided in favour of it (Figure 6). Again, other users played a central role, either because they constituted a potential hazard, or because they were considered unpredictable (e.g., children), and could develop into a hazard. Other explanations emphasised the motor demand of the driving task, both on the control (e.g., keeping the car straight on a narrow road) and the manoeuvre level (e.g., changing lanes). An example statement would be "*I know that from experience, that in work zones, it often gets too narrow. So for me, this would be too narrow.*" Visual

obstructions and bad lighting were considered problematic, e.g. "*I simply cannot see what's happening, if, e.g., there are kids between the cars, or other pedestrians or cyclists – just difficult to see.*", just as situations which clearly required dividing attention between multiple sources of relevant information (e.g., intersections).

The aspects that participants stated would need to change for them to refrain from texting / be willing to text (question dependent on their initial judgement of the situation) also followed these lines, as again, (not) having to interact with other road users, manoeuvre the car, drive at a certain level of speed, or make out the road ahead under limited or constrained visibility were mentioned most frequently.

4. Discussion and Conclusions

The analysis of drivers' explanations for why they deemed a certain situation suitable or not suitable for texting provided insight into what aspects of such situations they consider when making the decision to text. The most frequent arguments provided for texting in a certain situation (being able to foresee the behaviour of other road users, having lots

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of space ahead, having a clear view and driving at low speed) are all aspects that indicate that, subjectively, there is no imminent threat, and that any threat that might occur could be easily dealt with, as there would be sufficient time to respond to it (because of low speed, or because the threat would be easily detected). Situations for which this was not the case were largely rejected for texting. Other aspects that were repeatedly brought up can be summarised as "handling demand", i.e. characteristics of the situation that indicate that both hands might / might not be required on the wheel to safely negotiate the situation's demands.

When looking back at Fastenmeier's classification scheme [16], it seems that the findings of our study indicate that the objective complexity of the traffic situation played a clear role in our drivers' willingness to text. However, while this was true on average, it has to be acknowledged that on a case by case basis, the link between level of complexity and indicated willingness to text was rather weak. It might be argued that complexity as such, or at least the way it is defined scientifically, might be inappropriate to explain driver behaviour in a specific situation. E.g., the classification scheme is certainly reasonable in its assumption that for a road with a higher number of lanes, the average complexity of driving situations that occur on the respective road is higher compared to a road with fewer lanes. However, at the same time, if, in a specific situation, there are no other road users present, more lanes might actually result in reduced complexity (more space, i.e. more margin for error). So, there might be interaction effects between the different situational characteristics that, so far, have not been properly described.

Of course, to what degree our participants' subjective assessment of the traffic situation was actually appropriate is unclear at this stage. We found situations with very high levels of agreement, both with regard to drivers' willingness to (not) text and their arguments for (not) doing it, which might serve as an (admittedly very coarse) indicator that these situations are indeed comparatively safe / unsafe for texting. At the same time, there were many scenarios in which the participants' judgement was much less homogenous. Of course, we cannot rule out the idea that this heterogeneity is simply a reflection on inter-individual variations in participants' capabilities (e.g., ability to multitask), but this seems unlikely. Also, it should be pointed out that, even though participants' selection and description of "appropriate" contexts for texting appears to be somewhat reasonable, it is questionable if they would be able to finish the text message within the same context. Morgenstern et al. [18] analysed texting when stopped at a red light with the help of naturalistic driving data, and found that in more than half of all cases, texting that occurred during a red light phase was continued even after the car started to move again. In 33% of these cases, it took the drivers at least 10s (and often more than 1 min) until they finally stopped to text. So, while the engagement in a task might indeed be safe in the context in which it is initiated, many drivers might feel inclined or even pressured to finish what they started, even under less favourable circumstances.

It should be highlighted that how often a certain situational characteristic was reported by our participants as having played a role is not supposed to be interpreted as an indicator of the characteristic's actual importance for the respective decision. The frequency with which certain characteristics are brought up is, to some degree, simply a function of the selection of video material and what is depicted there. I.e., being stopped at a red traffic light can be considered a very strong argument for engaging in a secondary task, but, of course, not every video contained a red traffic light (and hardly anyone would explain an unwillingness to text by stating that there was no red traffic light), so "being stopped at a red traffic light" can only be a reasonable justification in a few cases. In contrast, the absence or presence of other road users can more or less always be brought forward as a potential argument, but that does not mean that it is the decisive one. To uncover the actual importance of a certain characteristic, additional studies could, with the help of a methodology similar to ours, manipulate the relevant characteristics more systematically. With the addition of a more fine grained assessment of willingness to text (e.g., a five point scale instead of a binary decision), the respective scores might be a better indicator of the role a certain situational characteristic plays in a driver's decision to start texting.

It also has to be acknowledged that a stated willingness to text based on the review of a video is certainly not the same as deciding for the actual activity when put in a real driving situation. While we believe that this shortcoming does not play a central role for our core findings (which aspects of traffic situations are, in principle, relevant for drivers when deciding to text / not text), it certainly could have caused an inflated proportion of "willing to text" responses. A replication of this study on-road (however, again only asking for willingness to text, not for the performance of the actual behaviour, both for legal and ethical reasons) might have the potential to bring us closer to a realistic estimation of willingness to text. Another approach would be to analyse naturalistic driving data, and look into known instances of texting (and appropriate baseline events) in such a dataset, focussing explicitly on the situational characteristics our participants reported as relevant for their decision, and test whether indeed, the prevalence of certain aspects is higher in real (non-)texting situations or not. Overall, it is certainly reasonable to assume that the proportions of willingness to text that we found, just like the frequencies with which the different situational characteristics were reported as relevant, are not fully reflective of the actual real world situation. Nevertheless, the identified characteristics as such already allow for a better insight into the basis of drivers' decisions to (not) text in a specific driving situation.

5. Acknowledgments

6. References

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Appendix

Table 1a Traffic situations presented to participants

	description	context	speed range (in km/h)	complexity[1][2]	participants willing to text (in %)
1	One lane per direction of travel, narrow road, parking vehicles on both sides, oncoming traffic, sunny	Urban	38-46	NA	**34.1**
2	Three lanes per direction of travel (with physical separation between directions of travel), ego vehicle in centre lane, driving through tunnel, other vehicles ahead on multiple lanes, no hard shoulder	Highway	NA[3]	NA	**51.2**
3	Three lanes per direction of travel, ego vehicle in right lane, no surrounding traffic, very slight curve, overcast	Highway	118-120	low	**90.2**
4	Two lanes per direction of travel (with physical separation between directions of travel), ego vehicle in right lane, truck approaching on ramp from the right (separated by guardrails), only few vehicles ahead, overcast	Highway	121-123	high	**63.4**
5	One lane per direction of travel, no centre line, narrow and curvy, oncoming traffic, sunny, glare	Rural	42-55	medium	**0.0**
6	One lane per direction of travel, cycle lane to the right, traffic island, curvy, other vehicles ahead, junction (right) ahead (ego vehicle has right of way), oncoming vehicle signalling to turn left, overcast	Urban	43-48	medium	**43.9**
7	One lane per direction of travel, no centre line, 30km/h zone, parking vehicles on both sides, narrow road, no oncoming traffic, overcast	Urban	15-29	NA	**61.0**
8	Two lanes per direction of travel (with physical separation between directions of travel), traffic jam, ego vehicle in left lane, trucks in right lane, other vehicles ahead, sunny	Highway	6-7	NA	**75.6**
9	One lane per direction of travel, no centre line, straight road / long and wide curve, no other traffic, sunny	Rural	94-99	low	**48.8**
10	One lane per direction of travel, no centre line, ego vehicle passing through forest, straight and narrow road, no other traffic, sunny (but shady on the ground due to forest)	Rural	47-54	medium	**43.9**
11	Two lanes per direction of travel, ego vehicle in right lane, light surrounding / oncoming traffic, junction (right) ahead without relevant vehicles (ego vehicle has right of way), slight acceleration, sunny	Urban	41-51	low	**70.7**
12	Two lanes per direction of travel (with physical separation between directions of travel), ego vehicle in left lane following other vehicles, parking vehicles in right lane, slowing down slightly while approaching traffic signal, sunny	Urban	35-44	low	**24.4**
13	Two lanes per direction of travel (with physical separation between directions of travel), ego vehicle in right lane, work zone, no hard shoulder, heavy traffic on both lanes with vehicles in left lane passing ego vehicle, ramp at the end of clip (no vehicles entering), sunny	Highway	66-69	high	**22.0**
14	Two lanes per direction of travel (with physical separation between directions of travel), hard shoulder, ego vehicle in right lane, ramp (no vehicles entering), light traffic, sunny	Highway	110-113	medium	**92.7**
15	One lane per direction of travel, no centre line, 30km/h zone, parking vehicles on both sides, ego vehicle crossing unregulated intersection, slowing down during approach, no other traffic, overcast	Urban	19-30	NA	**24.4**
16	One lane per direction of travel, long and wide curves along the route, oncoming traffic, ego vehicle following other vehicle, sunny	Rural	63-67	low	**43.9**
17	Two lanes per direction of travel (with physical separation between directions of travel), ego vehicle in right lane, work zone, no hard shoulder, heavy traffic on both lanes with vehicles in left lane passing ego vehicle, sunny	Highway	67-72	NA	**24.4**
18	Two lanes per direction of travel (with physical separation between directions of travel), ego vehicle in right lane, work zone, hard shoulder, heavy traffic on both lanes with vehicles in left lane passing ego vehicle, ramp at the end of clip (truck exiting), sunny	Highway	47-60	high	**22.0**
19	One lane per direction of travel, ego vehicle approaching rail crossing, junction (right) without relevant vehicles (ego vehicle has right of way), vehicles ahead, no oncoming traffic, sunny	Urban	38-43	NA	**68.3**
20	Two lanes per direction of travel (plus additional lane for right turns), ego vehicle in right lane, approaching traffic signal (green light), large distance to vehicles ahead, tram tracks (physically separated) between directions of travel, overcast	Urban	37-52	medium	**53.7**
21	One lane per direction of travel, curvy road, multiple junctions (right) with potentially relevant traffic (ego vehicle with right of way), yield-controlled intersection (ego vehicle has to yield), curve, sunny	Urban	48-52	medium	**39.0**

[1] according to Fastenmeier scheme [16]

[2] NA - situation not classifiable within the Fastenmeier scheme [16]

[3] no GPS signal in tunnel

Table 1b Traffic situations presented to participants (continued)

22	One lane (exit ramp), curve, slowing down considerably, no vehicles ahead, overcast	Highway (ramp)	39-74	NA	**26.8**
23	One lane per direction of travel, ego vehicle driving on embedded tram tracks, approaching signalised intersection, slowing down, narrow lane, vehicles parking on both sides, vehicles ahead, oncoming vehicle, sunny	Urban	18-32	high	**24.4**
24	Two lanes per direction of travel (with physical separation between directions of travel), no hard shoulder, ego vehicle on left lane, passing other vehicles, heavy traffic, sunny	Highway	96-105	medium	**24.4**
25	Two lanes per direction of travel, ego vehicle in right lane, approaching yield controlled intersection, about to turn right, slowing down, no oncoming vehicles, no vehicles ahead, overcast	Urban	5-20	high	**9.8**
26	One lane per direction of travel, slightly curvy road, oncoming vehicles, a few pedestrians on the sidewalk walking parallel to ego vehicle, sunny	Urban	43-45	low	**34.1**
27	One lane per direction of travel, narrow road, ego vehicle approaching yield-controlled-intersection (has to yield), slowing down, oncoming vehicles, wet road, overcast	Urban	15-51	high	**26.8**
28	Two lanes per direction of travel, ego vehicle in right lane, stopped at traffic light, tram passing between the two directions of travel, sunny	Urban	0	NA	**97.6**
29	One lane per direction of travel, cycle path (road level) on both sides, tram tracks (physically separated) between directions of travel, long distance to vehicles ahead, no cyclists, junction (right) with no relevant traffic (ego vehicle has right of way), sunny	Urban	51-52	low	**95.1**
30	One lane per direction of travel, no centre line, 30 km/h zone, parking vehicles on both sides, ego vehicle approaching uncontrolled intersection, vehicle approaching from the left, overcast	Urban	24-35	NA	**12.2**
31	One lane per direction of travel, no centre line, 30 km/h zone, parking vehicles on both sides, ego vehicle approaching zebra crossing (no pedestrians), oncoming vehicles, vehicles ahead, overcast	Urban	26-30	NA	**12.2**
32	One lane per direction of travel, straight road, oncoming traffic, no vehicles ahead, sunny	Rural	68-70	NA	**73.2**
33	One lane per direction of travel, narrow road, narrow curves, oncoming vehicles, vehicles ahead, sunny (very low, potential for glare)	Rural	46-48	medium	**19.5**
34	Two lanes per direction of travel, parking vehicles right, tram tracks (physically separated) between directions of travel, ego vehicle in left lane, passing truck in right lane, vehicles ahead, sunny	Urban	41-51	NA	**22.0**
35	One lane per direction of travel, parking vehicles to the right, ego vehicle following cyclist, oncoming vehicle, overcast	Urban	29-35	NA	**2.4**
36	Two lanes per direction of travel (with physical separation between directions of travel), hard shoulder, ego vehicle in centre lane, passing truck on right lane, no adjacent vehicle in left lane, long distance to vehicles ahead, overcast	Highway	111-121	NA	**34.1**
37	Two lanes per direction of travel (with physical separation between directions of travel), no hard shoulder, ramp (rest area), ego vehicle in left lane, passing truck in right lane, heavy traffic, sunny	Highway	99-106	medium	**34.1**
38	One lane per direction of travel, ego vehicle approaching yield-controlled intersection (has to yield), slowing down, has to yield to bus, oncoming traffic, wet road, sunny	Urban	16-31	high	**9.8**
39	Three lanes per direction of travel (with physical separation between direction of travel), ego vehicle entering highway in curve, truck ahead, heavy traffic, ego vehicle merging into traffic, accelerating, overcast	Highway (ramp)	25-71	high	**0.0**
40	One lane per direction of travel, long, wide curves, no other vehicles, ego vehicle driving uphill, sunny	Rural	70-73	low	**70.7**
41	One lane per direction of travel, straight road, slight curve visible ahead, oncoming vehicles, no vehicles ahead, sunny	Rural	69-72	low	**78.0**
42	Three lanes per direction of travel, ego vehicle in right lane, stopped at traffic light, pedestrians crossing at traffic light, sunny	Urban	0	NA	**97.6**
43	Two lanes per direction of travel (with physical separation between directions of travel), hard shoulder, ego vehicle on exit ramp, hardly slowing down, no vehicles ahead, overcast	Highway (ramp)	88-95	NA	**41.5**