

The Ideas Café: engaging the public in design research

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The Ideas Café brings together members of the public with domain experts to stimulate conversation in a high energy, highly collaborative participatory event. We aimed to explore how multi-disciplinary automotive design research could be accomplished using this tool. The automotive industry is now on the cusp of a design and technology revolution with the advent of driverless vehicles, and it is important to understand the social aspects of this technological change. Trust has been shown to play a major role in our ability to correctly and safely use autonomous systems, so understanding the facets of its development is critical. As experts in this field (in design, engineering and policy), we wanted to explore the potential of the 'Ideas Café' format as a channel for exploring the public's needs for the design of future driverless cars and systems. 36 participants attended our Ideas Café event held at the Coventry Transport Museum in June 2017. We found that participants were highly engaged and the event provided practical user data which was valuable for design, engineering and policy. The results also provided recommendations for how designers could run similar participatory events for their own research.

participatory design, Ideas café, Driverless cars, public engagement

1 Introduction

An 'Ideas Café' is an event where members of the public and experts in the field are brought together around a particular topic, to stimulate conversation between the two. As the name suggests, the format bears similarities to a café, with participants sat around tables with coffee and cake to engage in discussion. Through facilitation, the Ideas Café affords design researchers the opportunity to explore various experimental methods, as we demonstrate in this paper.

Rowe and Frewer (2005) identified the three terms 'Communication, Consultation and Participation' for the success of Ideas Cafés, and stressed the differences in the definitions (Rowe & Frewer, 2005). Communication describes the information moving from the expert to the public, consultation is the



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public informing the expert, and participation is the flow of information between both the public and the expert- mutually benefitting both parties. We identified these definitions as the first step in defining the appropriate methodology for the Ideas Café (Abelson et al., 2007).

Brown and Isaacs (2002) went further to identify the key concepts of an Ideas Café, summarised below in the second column of Table 1 (Brown & Isaacs, 2002). The authors recognised that these aforementioned principles draw many parallels to the KCP (Knowledge, Conceptualise, Proposal) model, often used in participatory design methods (Berthet, Barnaud, Girard, Labatut, & Martin, 2016). Comparing the three models, it is evident that the majority of the principles of an ideas Café is centred around facilitating conceptualisation and consultation, making it an ideal tool in design research looking to involve members of the public. The authors will aim to achieve the principles set out in Table 1.

Table 1 – Comparison of the KCP model and the principles of the Ideas Café (Brown & Isaacs, 2002) (Berthet et al., 2016)

Three success factors for Ideas Cafes (Rowe & Frewer, 2005)	Key principles of an Ideas Café (Brown & Isaacs, 2002)	KCP Model (Berthet et al., 2016)
Communication	Set the context	Knowledge
Consultation	Create a hospitable space	Conceptualise
	Explore questions that matter	
	Encourage everyone’s contribution	
	Cross-pollinate and connect diverse perspectives	
	Listen together for patterns, insights and deeper questions	
Participation	Harvest and share collective discoveries	Proposal

The principles of Ideas Cafes, have been used by governments to garner consensus and build trust in a new idea or topic (Petts, 2008; Yang & Pandey, 2011). At a high level, engaging with the public is key to building a society that can successfully adapt to change (Held, 1995), through enabling people to understand and verify different viewpoints and claims (Cooper, Bryer, & Meek, 2006). Many authors are developing models that attempt to formalise the engagement process to guarantee effective participation (Ebdon & Franklin, 2006; M. Kweit & Kweit, 1981). For this reason, it is evident that engaging with the public (through Ideas Cafes, for instance) is increasing in popularity as a tool in decision and policy setting (Irwin, 2001). However, many of the aforementioned studies have approached the study of public engagement from the perspective of organisational change and business management.

The authors were experts in the field from engineering, design and policy, and the Ideas Café format provided a method to explore the topic of driverless vehicles and trust on a broader, societal level. We are in an age of increasing automation, for example, GPS route planning, flight management, smartphones and now increasingly in the automotive context. Driverless cars are very much a reality. Given that we share so much of our road space with vehicles, it is essential that people can safely use this new technology (Hoff & Bashir, 2015). These automated vehicles will become increasingly responsible for the safety of the occupants of the car, and if the driver’s relationship is suboptimal, there is evidence to suggest that automated systems can be dangerous (Cranor, 2008; Strand, Nilsson, Karlsson, & Nilsson, 2014). The user’s trust in an autonomous system plays a vital role in ensuring correct human use. Furthermore, it is widely agreed that negative consequences occur as a result of the inappropriate level of trust placed in the system (for both too much, and too little trust) (Khastgir, Birrell, Dhadyalla, & Jennings, 2017; Muir, 1987; Parasuraman & Manzey, 2010). There is a pressing need for a better understanding of how we design these automated

systems, like driverless vehicles (Dzindolet, Peterson, Pomranky, Pierce, & Beck, 2003). In this paper, we are particularly interested in the design of autonomous, or driverless cars.

However, trust is complicated, with many facets that contribute to its development between the user and the autonomous system (Jian, Bisantz, & Drury, 2000; Khastgir et al., 2017; Spain, Bustamante, & Bliss, 2008). There are many attempts to try to approach this from a quantitative, experimental perspective (Fallon, Bustamante, Ely, & Bliss, 2005; Jian et al., 2000; McCarley, Wiegmann, Wickens, & Kramer, 2003), where key metrics are driver distraction and usability. There are also qualitative methods used frequently in literature with the aim of measuring and determining trust. For example, the use of interviews to determine the dimensions of trust and factors affecting insecurity in many different fields is well established (Hedges, Sykes, & Groom, 2009; Mechanic & Meyer, 2000; Muñoz-Leiva, Luque-Martínez, & Sánchez-Fernández, 2010). However, the field of driverless vehicles and transport is very much future focussed; for the majority of people they have little exposure to the fully driverless vehicles of tomorrow. Hence, the speculative nature of this research must be reflected in the study methodology. Incidentally, few have sought to understand the more experiential aspects of trust and there is an opportunity to use more creative methods to lead to a deeper understanding of these facets of trust. Further, we found that most studies restricted the trust data collection until after the user had interacted with the interface (Cramer et al., 2008; Pu & Chen, 2006; Söllner, Hoffmann, Hoffmann, & Leimeister, 2012) and neglected to capture user perceptions in a futures thinking context.

There are many participatory design methods available, each with their own advantages and suitability to different contexts (Wölfel & Merritt, 2013). In this case, we want to engage a large group of participants in a conversation around futures thinking about driverless vehicles; and we believe the Ideas Café provides a platform in which people can explore ideas through futures thinking, which has been shown to help people to envision the world they wish to live in, despite the uncertainty of the future (Inayatullah, 2008; Varum & Melo, 2010). What makes the Ideas Café unique is the informal setting, and the need for the two way flow of information between the expert and the user. The Ideas Café not only enables people to discuss future scenarios, but also collaborate and have a joint conversation on a topic.

1.1 Aim

This paper describes the exploration of the public's perceptions of trust in driverless vehicles using an Ideas Café public engagement event. Methods from design research were used to try and frame the problem in a participatory way. The aim of the event from an academic research perspective were:

- To produce recommendations for designers on how to use creative methods like the Ideas Café to explore technical issues like driverless cars with the public.
- To consider how the findings from the Ideas Cafe can be translated into practical guidance for designers, engineers and policy makers

2 Method

We aimed to achieve the Ideas Café guidelines set out in Table 1. The key was to enable participants to conceptualise the driverless future, and to facilitate the two-way flow of information between the public and the experts in an encouraging and collaborative environment. The advantage of the Ideas Café is that it facilitates the use of multiple creative methods. In this section we describe the two main methods we chose to achieve this, and how each relate to the key principles of an Ideas Café (Table 1).

2.1 Participants and Recruitment

The Ideas Cafe was advertised through a variety of methods with the help of the communications department at WMG, University of Warwick. The event used a webpage, Twitter and newspaper

press releases to give participants some preliminary pre-education before the event. The recruitment process is described below in Figure 2.

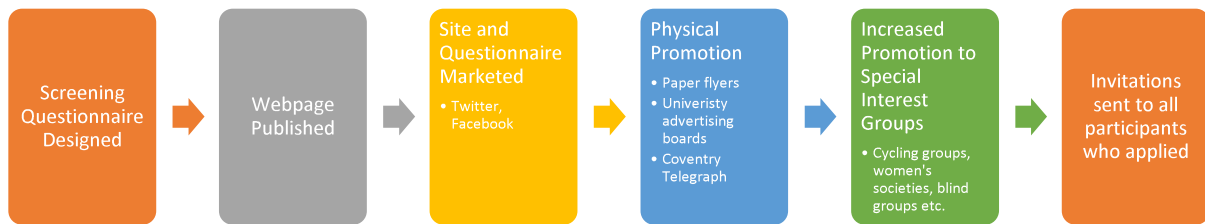


Figure 1 – Ideas Café Recruitment Strategy

2.2 Location

The location of the Ideas Café was very important in ensuring participants were able to attend the event (Baker, Addams, & Davis, 2005). The Coventry Transport Museum provided a central location for the target demographic of citizens of Coventry and the surrounding areas. We booked the venue for the 30th June 2017. Participants were provided with a bus pass to allow free travel to the location on the day of the event. Circular tables were setup to accommodate ten participants on each and were placed in a cabaret formation. Environmental cues can be influential in the participants’ ability to engage with the task (Berger & Fitzsimons, 2008), and so the selection of the venue was very important to the design of the Ideas Café to ensure an informal environment that encouraged participation.



Figure 2 – Exterior of the Coventry Transport Museum

2.3 Participant Pack

Each participant was provided with a participant pack which provided them with information about the day, an agenda, a feedback questionnaire and a brochure detailing the work at the research institution. The pack also included two paper people that the participants would use in the first exercise of the day, described next.

The materials were deliberately designed to be friendly and easy to understand, avoiding the use of jargon and technical language. We wanted to create a hospitable environment and encourage everyone's contribution, so did not want to alienate any individuals.

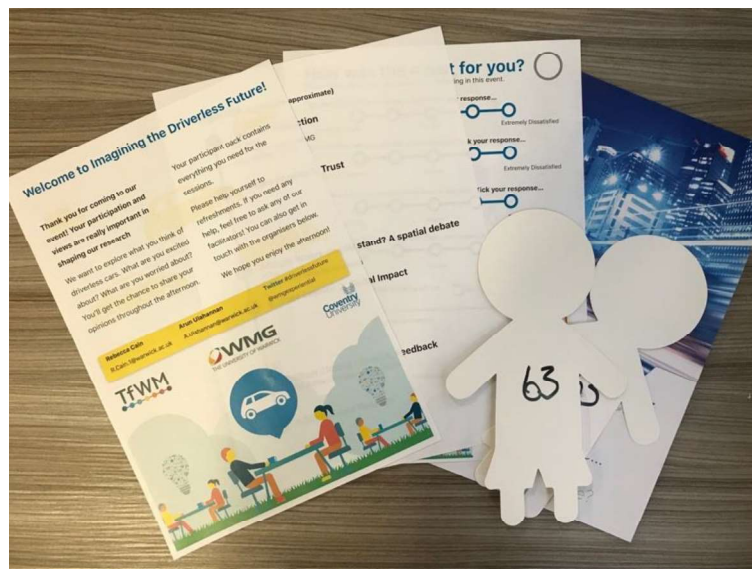


Figure 3 – Participant pack containing key materials for the day

2.4 Scale on wall

We wanted to achieve a real time indication of the attitudes and perceptions of the participants in the room in order to cross pollinate ideas and to provide a task which could help participants settle into the event. Hence, a semantic scale was placed on a wall near the entrance of the venue. This consisted of a roll of paper approximately 5 metres long with a blue line down the length of the paper with a question placed above it. As participants entered, they were asked to stick their paper person on the scale in response to the question “Do you think driverless cars are a good idea?”. This was also repeated at the end of the event to capture any differences in opinion from the start and end of the event. The scale had no markings, similar to Visual Analogue Scales (VAS) which has been shown to be less prone to bias (Carlsson, 1983).

2.4.1 Physical Scale

We aimed to capture attitudes and perceptions before and after the event, and also during the event using the table sessions. However, we recognised that after more than an hour of sitting, participants may become restless. To counter this, we proposed a standing physical semantic scale. Participants were then asked to this time physically stand on a line on the floor to represent their opinion. The compere then would ask participants to explain their viewpoint to the group and encouraged those with opposing views to engage in the conversation. Further, this helped cross-pollinate ideas and bring together people with opposing viewpoints in conversation, as recommended by the guidelines in Table 1. However, results were not collected for this as its purpose was as more of an energiser.



Figure 4 – Physical Semantic Scale Activity during the event day

2.5 Table Session

The table sessions enabled participants to freely express their opinions around a table of 4-7 participants. Three areas of trust were chosen for the table topics, these were Trust in Technology, Trust in Data & Privacy and Trust in Vehicle Brand; chosen from literature as the most pertinent issues to the topic of trust in driverless vehicles. We created a set of bespoke stimuli (Figure 5) for the event to explore these topics. These were artificial newspaper articles with headlines and small passage excerpts designed to help stimulate conversation around the table.

Participants were asked to capture their ideas on post-it notes and were asked to stick everything they produced onto a larger sheet of A2 paper. We did not provide any specific instructions on how participants should build or structure their posters, or if they had to be unanimous in their message. We wanted all points of view, particularly those that were opposed. This was displayed on a wall to the other groups. Each table facilitator then gave a one-minute summary of their discussion to the everyone. Bryson (2000) suggested that enabling participants to share and display their opinions in a public way is an effective facilitation method that can help build consensus in situations where opinions may be varied (Bryson & Anderson, 2000). Hence, for the goals of the Ideas Café, this methodology was a good choice.



Figure 5 – Artificial Newspaper Articles (for the Trust in Technology tables) designed to stimulate conversation around specific topics during the table session

2.6 Summary of Ideas Café Day

Figure 7 below shows the summary of the Ideas Café day plan. It should be noted that “Session 2: Social Impact” was an additional table session hosted by another collaborator and will not be discussed in this paper

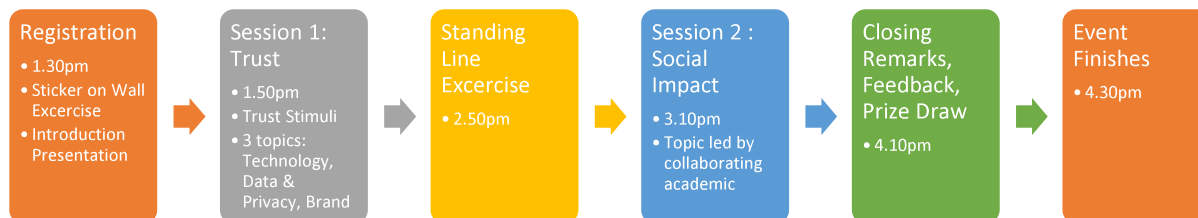


Figure 6 – Summary of the Ideas Café day

2.7 Facilitators and Compere

We were assisted on the day by ten table facilitators who were briefed on the event day and given detailed instructions on how to interact with participants and encourage participation. Facilitators were given guidance on how to structure the hour given for the table discussions. The goal of the Ideas Café was to facilitate two way communication, so we encouraged facilitators to engage in the conversation as a participant. Further, we encouraged facilitators to be wary of participants who felt uninvolved and to provide a platform for disagreement. The event day was also hosted by a compere who was experienced working in similar Ideas Café events. The compere’s role was independent of the research, which allowed the researchers to focus on the content of what was being said. The event was photographed by the University of Warwick photographer

2.8 Participants

36 participants arrived on the day for the event (22 male, 11 female, 2 preferred not to say). The age demographic can be seen below in Table 2.

Table 2 – Age Demographics

Age Range	Number of Participants
35-44	9
45-54	9
25-34	5
55-64	5
75 or older	4
18-24	2
65-74	1

Participants were split across 9 tables, with 4-7 participants and a one facilitator per table. From participant feedback, 44% of participants said they were ‘extremely satisfied’ with the event location, and 38% said they were ‘satisfied’. General comments from participants suggested that the location gave the event a sense of importance, and that the comments made were making a strong contribution to the research. 100% of participants said they were happy to be contacted again to take part in future research in the area, further suggesting that the Ideas Café was very successful.

However, we found that the majority of participants were recruited more effectively through email writing and networking with local special interest groups, such as parental groups and cycling clubs. This suggests that more work needs to be done to increase the awareness of the impact of driverless vehicles. The representation of society in the event can be seen below in Table 3.

The importance of pre-education was highlighted by the opportune showing of a television documentary on driverless vehicles the day before the event. Many participants came prepared with

discussion points and opinions, which were often attributed to having watched the programme the night before.

Table 3 – Representation of Civil Society in the Event

Occupation	Number of Participants
Retired	9
Academia	6
Student	5
Engineering	5
Government	4
Unknown	4
Charitable	1
Publishing	1
Marketing	1

2.9 Ethical Considerations

Ethical approval was granted by Coventry University for the study P52764 Trust in Connected and Autonomous Vehicles: Ideas Café. The Ideas Café is primarily based on perceptions and attitudes with no bio-metric or physiological data collected. All data was stored securely at WMG, University of Warwick in accordance with the University of Warwick’s strict data protection guidelines.

3 Findings

This section will present and discuss the results from the creative methods deployed in the Ideas Café.

3.1 General Findings

We aimed to achieve the guidelines derived from literature in Table 1. Achievement of these guidelines would suggest that the Ideas Café was successfully able to facilitate the generation of knowledge, aid in conceptualisation and the creation of proposals. We found that this was the case, the Ideas Café provided an environment in which participants were able to discuss the issues of trust in driverless vehicles. The short presentations at the beginning helped set the context. The provision of cake, coffee and a comfortable environment created a hospitable space for participants. The table sessions with the help of table facilitators delivered on encouraging everyone’s contribution, cross pollinating ideas and bringing together participants to develop patterns and insights. Finally, asking participants to develop A3 summary sheets of all their notes and have them displayed on a wall helped harvest and share the collective discoveries of the session.

3.2 Semantic Scale on a Wall

The scales were collected and the data converted into spreadsheet data by measuring the distance from each point to the left side of the scale in Photoshop. The results for the first and second line can be seen below in Figure 8 and Figure 9 respectively.

The subsequent statistical analysis using the Wilcoxon Signed Rank Test can be found in Table 4 and Table 5. This test was chosen because it allows us to see if there was a statistically significant difference between the two sets of results where the same participants were involved in both trials. Importantly, the 3 assumptions of the test were met: 1. The dependent variable should be ordinal or continuous (in this case, it was continuous). 2. The independent variable should consist of two categories which contain related groups i.e. the same participants are present in both sets of data (hence, those participants who left the event before completing the second line had to be excluded from the analysis) 3. The data from both groups have distributions that are symmetrical with each other (this was verified using a boxplot in SPSS)

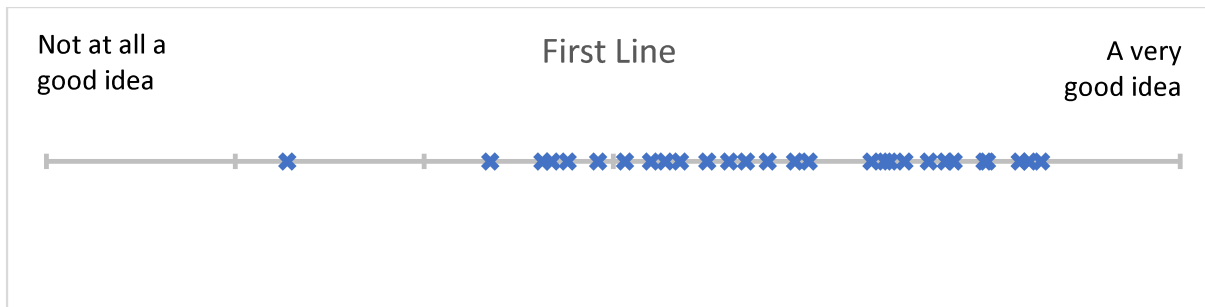


Figure 7 – Representation of the Line Exercise from the start of the event

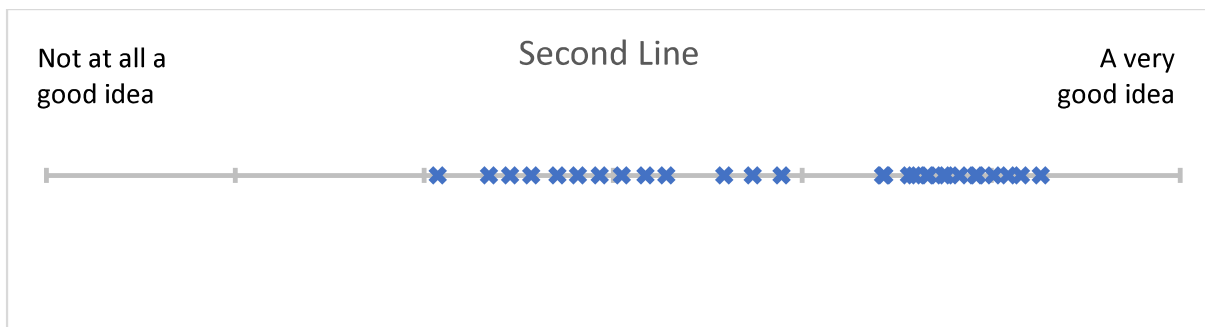


Figure 8 – Representation of the line exercise from the end of the event

Table 4 – Descriptive Statistics for the semantic scale on the wall analysis

	N	Mean	25th	50th	75th
First	28	7694	6193	7780	9473
Second		7902	5913	8861	9629

Table 5 – Wilcoxon Signed Ranks Test for the semantic scale on the wall activity

Second-First	N	Mean Rank	Sum of Ranks
Negative Ranks	13	13.65	177.50
Positive Ranks	15	15.23	228.50
Z	-0.581		
Asymp. Sig. (2 tailed)	0.561		

The descriptive statistics in Table 4 suggest that participants were in favour of the idea of driverless cars (on both scales), with the mean and 50th percentile being placed towards the more positive response on the semantic scale. The Wilcoxon results in Table 5, (indicated by the positive and negative ranks) show that 13 people became more negative versus 15 who became more positive about the idea of driverless cars. However, the Z value (-0.581) told us that this difference was statistically insignificant. It may have been the case that the demographic present were more steadfast in their opinions and were not easily influenced by opposing views.

In addition to capturing attitudes and perceptions, the activity helped participants feel settled and comfortable. Second, it provided the event with a strong user centric focus by enabling participants

to easily share and publicly display their views, setting the precedent for participants to be more willing to share their opinions.

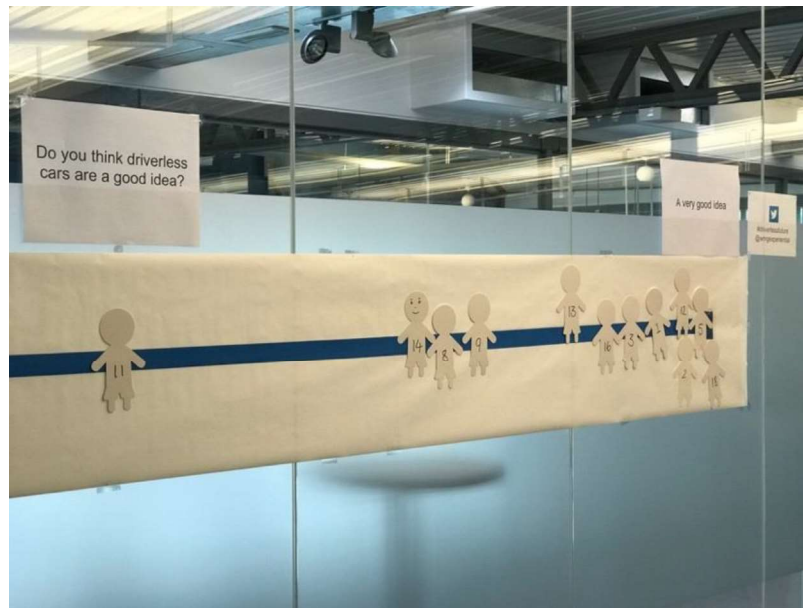


Figure 9 – Partially completed semantic scale on the wall with participant paper people

3.3 Table Discussions

3.3.1 General Comments

We had originally thought that the vehicle's brand would be a key factor for trust. However, the method revealed that this was not the case and societal acceptance was the key emergent theme. Emergent themes were a result of the open ended, conversational nature of the event. The newspaper articles were only provided as a general guide, and facilitators were instructed to allow the group to take the conversation in the direction they wished. Evidently, this methodology was effective at revealing different design issues to be addressed more specifically in the future. However, generating specific solutions would have required a more explicit topic choice and structure.



Figure 10 – Example of one table's finished poster, comprising of post it notes from the table session and the artificial newspaper articles



Figure 11 – Participants engaging in conversation at the Ideas Café in the Coventry Transport Museum

In the following results tables (Table 6, Table 7, Table 8), sources represent the number individual of participants who made a comment applicable to the corresponding code. References represent the total number of comments for that code, allowing us to account for one participant who may have made multiple relevant comments to that code.

3.3.2 Analysis

By transcribing all participants comments into Nvivo, we ran a thematic analysis as part of grounded theory. This methodology was chosen to enable the us to draw the emergent themes and theories from the data. This open ended qualitative format enabled us to collect rich data and find underlying themes that would not have been possible with just a quantitative approach. This allowed us to discover what factors affect the development of trust in driverless vehicles.

3.3.3 Trust in Technology

Table 6 – Coding analysis results for the theme: Trust in Technology

Code	Sources	References
Capabilities of Vehicle	7	9
Reliability	7	10
Vehicle Brand Matters	6	9
Coexistence of traditional and self driving vehicles	5	5
Aesthetics	4	4
Service and Maintenance	4	5
Driving Style	4	4
Cost	3	3
Nothing can stop Driverless tech arriving	3	3
Testing of Technology	3	5
Brand does not matter	2	2
Resale	1	1

The capabilities and reliability of the vehicle were the key concerns. Participants appeared to draw on their previous experience with computers in general, “Computer systems are not all they should be” (P15) and “Technology can go wrong, it can do a lot of damage” (P7) when communicating their opinions on driverless vehicles; consistent with findings which suggest previous experience is a key aspect of trust (Lee & See, 2004; Teacy, Patel, Jennings, & Luck, 2006).

Both the capabilities and reliability featured with equal importance in participant responses (both with seven participants each). Some participants named specific issues, for example, “can it be trusted with speed limits?” or “Can it be trusted with last minute changes?” (P25). We would suggest that the Reliability and Capability codes can be categorised under the theme of safety. Hence, ensuring the public are content and convinced with the safety of the technology would appear to be a key success factor for the technology.

Participants were also concerned with the ‘co-existence of traditional and self driving vehicles’ (5 participants). For example, “What will be the impact on traditional vehicle manufacturing?” (P14) and “How do old vehicles perform?” (P11). All comments in this code were written as questions, suggesting participants seek more information on this topic. This would highlight an area where research can do a better job of communicating the potential solutions to these issues.

Consequently, what should be done to communicate the capabilities and reliability of the vehicle? Statistically proving the technology’s safety is one possibility. However, it has been found that this would be impractical, requiring hundreds of millions of miles of testing to prove their safety (Kalra & Paddock, 2016). With capability and reliability being key findings for the adoption of driverless cars, it warrants further research as to how this can be communicated with the user.

3.3.4 Trust in Data and Privacy

Table 7 – Coding analysis results for the theme: Trust in Data and Privacy

Code	Sources	References
Safety Risk	11	16
Customisable Privacy	8	10
Acceptance that data is shared	6	6
Not concerned	6	8
Differential Privacy	5	5
Unaware of Sharing	5	5
Targeted Advertising	4	4
Data Storage	3	3
Reasons why	3	4

Participants were concerned with the safety risk associated with data collection. Hacking featured multiple times in the safety risk code, “Could they be hacked?” (P14), “Potential for hacking” (P2), and “Self driving cars are open to cyber security threats, more susceptible to terrorism” (P34). Given the prevalence of software based attacks and security leaks in the media recently, it is understandable that participants were vocal about this aspect of driverless cars.

A few participants were aware of the benefits of data sharing in creating more reliable and better supported systems, for example, “Good thing, data will help the technology work more efficiently” (P1), “Information...communication are necessary to enhance the quality and reliability for self driving vehicle” (P19). It is evident there needs to be further exploration on what types of data sharing is deemed critical to the function of the car and should not be turned off. However, some

participants remarked, “I accept that most of my data is already out there, especially my location at any given time” (P1) and “We already share our data,” (P18). With the numerous online services that we use and the data collected from them (for example, Gmail, Facebook etc.), it may be the case that the data sharing by driverless vehicles would not be an issue.

The event would suggest that there was no general consensus on data. One solution that appeared to be able to satisfy all viewpoints was the idea of differential or customisable privacy. These are new techniques that allow analysis of data collected from personal devices whilst removing all personally identifying information from the data (Eigner & Maffei, 2013). Though no participant specifically named this technique, it was evident from their responses that this could be an amicable solution.

3.3.5 Societal Impact

Table 8 – Coding analysis for the theme: Societal Impact

Code	Sources	References
Accessibility Issues	7	10
Involve People in the Design	7	9
Legal, Regulatory	7	9
Concerns with No Driver	6	9
Infrastructure	4	4
Adoption of Technology	3	4
Age Issues	3	4
Pedestrians	3	6
Physical Privacy	3	4
Children	2	2
Job Loss	2	2

The social impact of driverless vehicles featured in almost all participant responses across the three discussion tables. Accessibility issues were voiced by participants, concerned with how the technology interacts with people, for example, “Would the technology be too complicated for the average person?” (P25) and “Control for all people, not just the technologist” (P8). Participants were able to describe methods that would solve this, akin to the methods used in participatory design, “Technology can be trustworthy, but it needs to start from a certain group of people (and not engineers) to assure that it’s working” (P5) and “Involve public i.e buses and taxis should be involved” (P23).

Communication was raised as an important factor in the adoption of the new technology, “Unbiased communication towards building trust” (P23), “Use of language- explain why needed” (P16). Studies have found that in any change process, good communication and the language used to deliver the message is critical to the success of the change initiative (Bordia, Hunt, Paulsen, Tourish, & DiFonzo, 2004). It also highlights the importance of events like Ideas Cafes as a tool for communicating with the public, and how participants perceive good communication as a key part of building trust. These findings suggest that the issue of building trust is not a technical problem, but one that is based primarily on good communication with the public.

The next major theme was the legal and regulatory impact. For example, “Who is liable? [in a crash]” (P25), “Needs to be regulated, legal and ethical” (P10). These appeared to stem from the lack of human driver, led to accessibility concerns. For example, a few elderly participants remarked, “who

will take luggage and help visually impaired to reception desk (eg. In a taxi)” (P6), “remember the human element of taxi drivers” (P8), “Trust late at night, no bus or taxi driver, not good for reassurance” (P6). These issues are present regardless of the maturity of driverless technology and raises questions as to what kind of solution can provide the same level of tertiary services (such as help with luggage) as a human driver. The results make it evident that though increased accessibility is touted as a beneficial feature to older users who will be able to maintain their independent travel, there are other aspects which may be more detrimental to the vehicle user experience to older drivers.

3.3.6 Design Recommendations

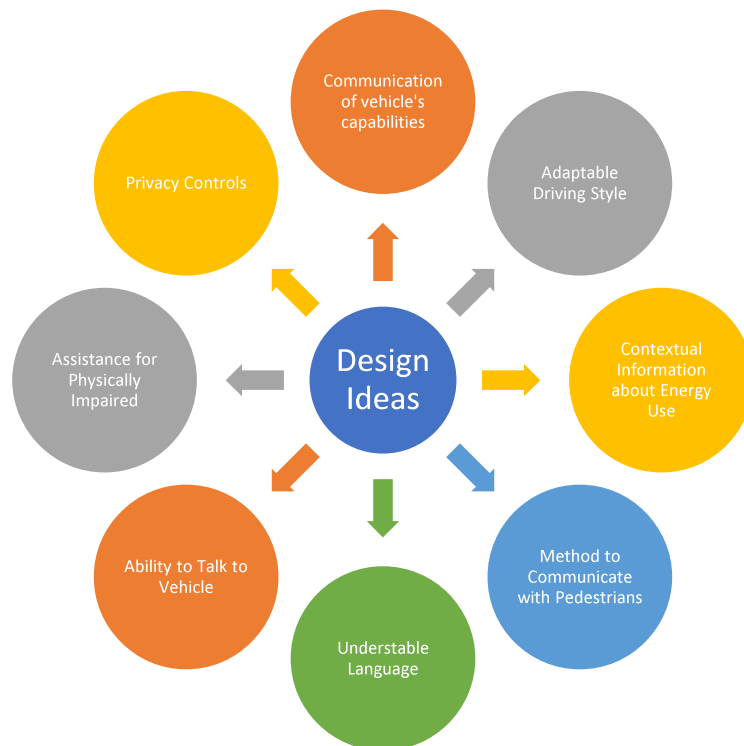


Figure 11 – Summary of design ideas from the table discussions

After our analysis of the table sessions, we were able to identify themes from participant responses that can be used to motivate our future research. The variety of methods used were aimed at achieving the principles defined in Table 1, which helped realise the value of the Ideas Café in bringing together a large group of people to discuss a futures thinking topic. Our current research up to this point found that the vehicle’s situational awareness was critical to trust formation. The results from this Ideas Café expands on this, suggesting that more contextual awareness of both the impact of the environment on the vehicle (by displaying other vehicles it sees) and the impact of the vehicle on the environment (by displaying information about its energy use, adapt the driving style and methods of communicating with pedestrians) are also important to trust. Also highlighted was the importance of avoiding jargon in the interface design through ‘understandable’ language. Interestingly, common rhetoric has been that self driving vehicles are a boon to accessibility, by providing those who are unable to drive a platform to maintain their independence. However, the lack of a driver raised concerns about how luggage can be handled, or how they can be provided with assistance when checking into a hotel. Participatory design aims to involve as varied group of demographics as possible, and can help explore these issues further. This is a good example of how the open ended nature of the ideas café format enabled participants the platform to freely explore design issues.

4 Limitations

This section will provide a description of the limitations of the methods used at the Ideas Café.

4.1 *Scale on the wall*

A key limitation of the scale on the wall is the possibility that the question “Do you think driverless cars are a good idea?” is leading, and perhaps if participants were asked instead if they were a bad idea, the result may have been different. A more appropriately designed question would have been “What do you think about driverless cars?”.

The physical standing semantic scale, while very useful during the event, had limited value to the results of the day because of the difficulty in capturing the result. With the limited time available during the day, it would have been impractical to measure the positions of every participant, and so the data was not captured. We recommend that future events could plan for longer time to be given to the exercise, and perhaps capturing the positions with a panoramic photograph. However, it was still beneficial to the event, as an energiser.

4.2 *Table Session*

The table sessions provided the most significant proportion of the data collected from the event. The Ideas Café format allowed participants freedom to discuss and approach the topic as they saw fit. This is both an advantage and disadvantage; while this allowed the results to cover a broad spectrum of topics, it also meant that no specific topic could be explored in particular depth.

This alludes to one of the limitations of the Ideas Café in that it did not audio record the sessions, this placed greater stress on the expert facilitators on taking detailed notes and encouraging participants to write all their thoughts and comments. Audio recording the tables would have been beneficial, but difficult to analyse given the number of participants on each table.

5 Conclusion

This paper set out to explore how the Ideas Café event can be used in design research. Specifically, it set out to produce recommendations for how designers should run these types of events in their design research and to consider how these events can be used to generate guidance for designers, engineers and policy makers.

5.1 *Unique Aspects of the Ideas Cafe*

The Ideas Café is unique in that it provides an informal setting to explore a variety of different engagement tools with the express purpose of creating a two way flow of information from the expert to the user. Educating the public, whilst also understanding their perceptions. Other methods like Charrettes (Gibson & Whittington, 2010) and Focus Groups (Asbury, 1995) appear to be similar, but place far greater emphasis on defining a specific topic to solve, and having a greater structure to the event. Ideas Cafes take a much more informal, open approach, providing participants with a relaxed café style environment with cake and tea, and more focus on two way communication.

Consequently, location was far more pivotal in the success of the event in comparison to other methods. Providing participants with a strong context of vehicles and the open informal space afforded by the Coventry Transport Museum was evident from the high engagement and feedback, and also the breadth of results gathered from analysis. For future design researchers, the location of the event is of critical importance to the success of an Ideas Café.

5.2 *Future Work*

We have demonstrated how it is possible to gather perceptions whilst also educating the public on the topic of driverless vehicles using an Ideas Café. The methodology we have presented show how designers can run similar futures thinking events, the results of which we are able to take forward into more focussed research questions. We gained a better understanding of the key issues that must be addressed for users to trust the autonomous vehicle.

Specifically, we will be taking the communication of the vehicle's capabilities into future research using more technical methods such as the use of a driving simulator and quantitative data collection. The value for our research is that we've been given a select number of areas that we can focus on, in comparison to the myriad of research topics that driverless vehicles involve.

The highly positive feedback from participants on the day, as well as the fact that all participants were happy to be invited back to take part in future research, were endorsements of the method. For the authors this means we are now able to access a large pool of participants for future research in the area, this was an unexpected but very useful outcome. For design researchers, this could mean the Ideas Café can provide the platform to create user groups for future workshops where one could explore design problems in more detail.

We have shown how the Ideas Café can provide an environment to help participants conceptualise the future and shown how the results from open ended discussions can be translated into a set of practical guidelines. We hope to see more designers adopt the Ideas Café format to engage with the public to design the technologies of the future that will have a significant impact on society.

6 References

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