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Detextive Concept Document

Project Thumbnail

Detextive is a first-person texting and driving game that utilizes several peripheral devices to simulate the complexity of texting and driving. The serious goals of *Detextive* are to educate teenage drivers about the dangers of texting and driving, and to transfer safe behaviors and alternative practices to their real-world experiences. The game takes place in a futuristic environment that mimics real-world driving as the player progresses through a detective narrative and learns appropriate behaviors for using their phone in a car.

Target Audience

Teenage drivers, especially those with dangerous texting and driving habits or with friends who have those habits.

Delivery Platform and Justifications

Detextive will be released as a single-player PC game. Using a computer as the console makes the game available to a wider audience, and allows a larger selection of devices to be used as the various peripherals required for the game (see Technology section). The game will be single-player as the character will be driving alone at most times, and any scene including a passenger needs to be more controlled for narrative and serious goal purposes.

Learning Objectives

- Understand the dangers of texting while driving

- Realize that some perceived 'safe' options are unsafe or even more dangerous

- Use legitimate safe alternatives when communication is necessary

- Avoid driving while tired or bored; take breaks if necessary

Needs Analysis	Task Analysis
Teens are bored while driving and use their phones to entertain themselves.	- Encourage teens to drive with another passenger to prevent boredom. - Convince teens to not drive when they are tired/sleepy. - Remind teens that they can take breaks on long drives if they are bored.
Teens feel that immediate communication via text is important. They think the texts could be urgent.	Get teens to understand safe alternatives to texting while driving. - Have a passenger read/respond to messages. - Reading at a red light/traffic is not safe. Pulling over on the side of the road or into a parking lot is preferred.
Teens are unaware of the dangers of texting while driving.	- Inform teens that sending and reading texts while driving are equally bad. - Inform them that listening to a text-to-speech version of their message is only marginally better than reading it on the phone. - Inform them that holding the phone lower to decrease the phone's visibility to cops is significantly more dangerous than holding the phone higher.

User Interface and Environment

In *Detextive,* players navigate their sleek police hover car around the futuristic

environment of New Dystopia (*placeholder name*). Various elements popular in noir films and

associated media will be present throughout the environment, such as high contrast lighting and

gritty urban locales. Throughout the course of the narrative, players will need to navigate

through the city using the Nav-O-Matic (a virtual GPS) in their phones to locate the next mission

objective and reach that point to further the story.

The user interface consists of a virtual car interior and a rendering of an external city

environment, with a dynamically positioned phone device in one of the player's virtual hands.

Game input is controlled via the use of a wheel peripheral, as well as an electronic pedal and a

device such as the Razer Hydra to track the position and orientation of the phone within the

virtual environment. The in-game phone will be used to handle "texting" as well as guiding the

player in the city with a virtual GPS app. Texting is accomplished by scrolling through a list of

pre-existing phrases, of which only some are appropriate in the context of the game. The Hydra

will be used to select the desired response. We are also considering the use of a headset, such as

the Oculus Rift, in order to take the player's field of view and direction of vision into account for

a more realistic representation of driving.

(Fig. 1) The player's view with his or her hands on the wheel

(Fig. 2) The player's view while texting

Interactivity

The player of *Detextive* is given control of a virtual car and mobile phone, and is free to make any decision required to further the game. These will include navigating through the virtual level (using the wheel and pedal), responding to messages on their virtual phone, and at the conclusion of the game chasing down the main antagonist in a dramatic car chase scene. The player can hold their "phone" in any position they desire, as the Hydra will take its position into account and render the virtual phone at the corresponding location and orientation within the game environment.

The interactivity provided to the players corresponds to the teaching points of our game by emulating the same situation in which someone could be texting in real life – sitting in a car, the phone in one hand and the wheel in the other. Our game provides a low-risk environment to demonstrate to users the consequences that can result from sending and reading texts while behind the wheel.

Narrative

In *Detextive*, the player is a detective chasing after a psychotic criminal mastermind. While the police investigations are marred with red tape, the player is an independent detective outside of the force doing things his own way. However, the player has a friend working with the police who can feed him information based on their research. The criminal that is being chased gets enjoyment out of toying with the player and will text the detective cryptic hints about where he is and where he'll attack next. By texting these hints to the police and using advanced encryption apps on his futuristic smartphone, the player will need to piece together the puzzle and rush to various locations around the city in order to identify the criminal and bring him to justice.

Gameflow

The core gameplay of *Detextive* has the player trying to communicate with NPCs while simultaneously rushing to the scene of a crime as quickly as possible. Throughout the game, the player will need to communicate with the police and the criminal himself to discover who is responsible for these crimes and bring him to justice. To communicate, the player will have to look at their phone in the game world and send responses using the attached peripheral. The narrative of the game provides a sense of urgency to the player, motivating them to check their phone and send texts to advance the story and work towards tracking the criminal. However, if the player checks their phone while driving, the game will become prohibitively difficult and the player will crash and/or get a ticket.

The game will be divided into a sequence of levels. Each level will have a slight spin on the central mechanic of the game.

The first level of the game will have the player driving alone to introduce the player to the mechanics. They will need to read and send texts from their phone so the game can show them how difficult it is to drive safely without their full attention. Over the course of a few levels, safe alternatives to texting while driving are provided to the player.

A bad habit that drivers get accustomed to when driving in regions where texting is illegal is to hold their phone under the dashboard so that the police won't see the device. After the first level, we'll introduce the ability to hold the phone lower and remind the player that texting while driving is illegal. If the player wants to continue texting while driving, the game will become incredibly difficult at this point, meaning the player will be forced to use safe alternatives in order to advance.

Once the police have been introduced as a threat, the player will be shown that they are able to pull over into a parking lot or on the side of the road to text. The game will know if the player tries to text while stopped at a red light and will make them more easily targeted by the police or cause other NPCs to honk at them to increase the pressure. The game will attempt to get the point across that the safest way to text while driving alone is to pull over.

In one level, the player will pick up a partner who can read and send texts for them. Since the player won't have to take their eyes off of the road to advance the story, they get to experience how much safer it is to have a passenger in the car communicate on their behalf.

In another level, the detective will be extremely exhausted while driving late at night. As he gets more sleepy, the screen will get darker and blurrier. By pulling over, he can regain his energy and continue the chase. Since one of the big reasons that teens text while driving is to stay awake when they are tired, this level allows players to experience another method of staying awake that is much safer.

The final level will have a series of choices for how the player can respond to the text safely. This level acts as a final test to see how much the player has learned, like most final boss fights in video games. The player can choose to bring a partner with them to read the texts easily, but he will have to be dropped off before the end of the level. The player will be presented with red lights and stop signs as temptation, but will still be rewarded for pulling over to check texts. Tension will be high and the criminal and police will be texting the player continuous updates, but the only way the player will be able to succeed is by pulling over to check them. In the end, the detective identifies the criminal and is rewarded with the finale to the story.

Implementation of the Paper Prototype

In order to implement our paper prototype, we will make use of a variety of materials, such as 3x5 notecards, printouts of game interface mockups, and a plastic (or cardboard) steering wheel. Our prototype will have multiple notecards with several text message conversations written on them. Another notecard will illustrate a mockup of the Nav-O-Matic (Fig. 3).

Sample Nav-O-Matic Map

(Fig. 3) Nav-O-Matic Mockup

The cards will be set up with several responses to choose from, in the context of the conversation being presented to the player. Only some responses made by the player will move the story narrative forward; others are dead ends. The selection method we have planned for responding to texts is similar to that seen in many RPGs with the selection box and the capability to scroll through the presented response options (See Fig. 4).

5) Response Five

4) Response Four

3) Response Three

2) Response Two

1) Response One
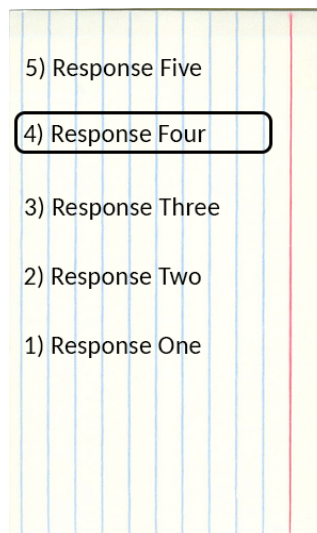
(Fig. 4) An example of the "phone" in our paper prototype, with various responses

In order to show the effects of looking down from the road to send/receive a text message, we will make use of a paper printout of the game interface with portions blurred to simulate the distracted attention of the driver. When the player in our prototype pulls out their phone notecard, the main interface mockup will be swapped with a partially obscured version (Figures 1 and 2).

Technology

Detextive is designed for playing on the PC and utilizing several peripheral devices to simulate driving and the complexity of texting while driving. *Detextive* uses the following peripheral devices:

- Wheel - Any steering wheel controller compatible with the PC will work. The use of the wheel is very simple in game and does not require the buttons.

- Pedal - Any pedal compatible with the PC will work. The purpose of the pedal is for the player to attempt to control the speed of the vehicle in-game, which is harder to do while texting.

- Oculus Rift - This virtual head-mounted display will be used to experience *Detextive* as though the player is really there, adding immersion to the use of the other peripherals and giving the player free control over what they choose to focus on while driving.

- Razer Hydra - A motion and orientation detecting game controller, used to simulate the player holding a phone in their hand while they handle the steering wheel. The joystick and buttons on the Razer Hydra allow the player a more tactile method of controlling their in-game phone. This is a benefit over using an app on a smartphone because the player will not have to guess at what they're pressing on a touch screen while the Oculus Rift is over their eyes.

Detextive will be created using Unity as a first-person driving game with randomly generated roads, scenery and obstacles so that a player cannot simply memorize the level and complete it while using dangerous texting practices.

Evaluation and Assessment: Methods and Tools

The goals that need to be assessed in relation to the game involve changes in the beliefs, and subsequently the behaviors, of the player base as pertains to texting and driving and immediately adjacent concepts.

Tracking beliefs is most easily accomplished through surveys, which should be used both before and after play for the sake of comparison. A 1-5 scale (strong disagreement, disagreement, neutral, agreement, strong agreement) would be appropriate, and the survey items should cover all of the relevant goals implied from the needs and task analysis. Some likely statements are given below:

- *As long as no other cars are around when driving, it's safe to text.*
- *Reading texts requires less concentration than responding to them, so just reading texts does not represent a distraction from driving.*
- *When stopped at a red light, it's safe to text.*

- *As long as the police can't see the texting device, there's nothing wrong with using it.*

- *If a passenger is traveling in the car, asking them to read out, and enter responses to, texts is the safest option.*

- *Driving when tired or sleep-deprived is unsafe.*

(For these examples, the first four should elicit disagreement and the latter two should be agreed with, in order to meet the goals.)

For behavior, some assessment can easily be conducted as part of the game. In order to succeed, players must ultimately use safe behaviors like pulling over to respond to texts, or asking for help from a passenger. Therefore, completion of the game's challenges should approximate some positive direction or change in a player's behavior.

However, since the game environment is (at least aesthetically) distinct from reality, and change in beliefs does not necessarily automatically translate to changed behavior, transference cannot be guaranteed from the above methods alone. Analysis of real-life data is the best way to be sure that behaviors have changed.

The simplest and least invasive way of evaluating the game's effect through statistics is by comparing the rates of driving accidents involving teens, especially those where texting can be identified as the cause, before and after deployment of the game. The main issue here, though, is that unless the player population is concentrated in a specific area, it may be difficult to point to the game as the primary cause for the behavioral change. A more reliable result may be achieved by determining two sample populations with similar demographic distribution and automobile accident rates, introducing the game to only one of the populations, and comparing the accident rates of the two populations afterward.

An additional possibility for evaluation is to have a phone companion to the game that directly tracks frequency of use of the phone's texting capabilities while in motion. However, distinguishing whether the driver is also the one texting is more challenging, and ignoring it will skew the data. This requires either asking them directly, which isn't much more effective than a follow-up survey (users may not be motivated to respond to such queries), or using video monitoring capabilities (violation of privacy unless permission is explicitly given beforehand, and knowing the camera is there might skew the data).

Sources

https://geoloqi.com/blog/2012/03/data-portraits-powered-by-3-5-years-of-data-and-2-5-million-gps-points/