

To Blink or Not To Blink

Alvaro Cassinelli
University of Tokyo
cassinelli.alvaro@gmail.com

Stéphane Perrin
perrin.japan@gmail.com

ABSTRACT

A darkened corner reproduces the look of a small, gloomy apartment. A sofa placed right below the corner faces a TV set. The remote is visible on a small table that sits between the sofa and the set. This configuration naturally invites the spectator to sit and turn the TV on. Not noticing anything peculiar, they may browse some programs before briefly pausing on something. However, after less than ten seconds of watching, the TV will randomly switch itself to another channel. The spectator may switch back to the selected program using the remote, but there would now be a gap in whatever they were watching. If they do not use the remote, the new program will eventually be interrupted too, again in a seemingly random way. **It will take two or three of these interruptions for the spectator to discover that they are causing these disruptions by blinking their eyes.**

INTRODUCTION

To blink or not to blink is a playful reflection on the active role that the (supposedly) passive spectator plays in post-editing and censoring visual media. To give an example: it may take a whole day to generate five seconds of a stop motion movie; this means that blinking even for a fraction of a second equates to skipping several hours of hard work. Were the creators of the movie conscious of the possibility of this disrespectful intervention in the first place? Most likely not; but unless one straps the spectator to a chair, with their eyes artificially held open like Alex in *A Clockwork Orange*, blinking will be inescapable: it is a natural feature of seeing with human eyes. Blinking may not be the meanest form of disrespect that our body shows towards a filmmaker's hard work (going to the toilet in the middle of a movie is certainly worse), but it's symbolically more powerful: blinking randomly introduces a million tiny cuts in an otherwise carefully edited movie; it is a rain of razor blades that mutilate the film.

TECHNICAL STATEMENT

The (technical) heart of the installation is the blink detection mechanism. This is achieved by continuously shooting a close up of the spectator's face. The camera is connected to a computer that processes the images in real time. After finding the face (using the OpenCV Haar-classifier library, integrated in openFrameworks), the location of the eyes is inferred by relying on standard face proportions (see Fig.1-a). Blink detection is performed by simple frame differencing in the region of the eyes. Efficient and robust de-

tection of the blink is possible even in a dimly lit environment using an infrared light source. Each time a blink is detected, the information is sent wirelessly (Bluetooth) to a microcontroller (an Arduino Mini). The microcontroller then activates a small servo-motor that presses the buttons on a secondary, universal remote controller. This remote is inserted below the "bluetooth zapping module" (see Fig.1-b) and both the remote and the zapping module are hidden somewhere nearby (for instance, under the table). The original remote controller is left visible on the table, perfectly accessible to the spectator. Even though the zapping module is invisible, the spectator can hear the characteristic robotic sound produced by the servo-motor as it presses the buttons on the remote. Since this sound perfectly correlates with blinking, it gives the spectator a direct clue about what is happening (incidentally, it produces an eerie feeling of being somehow part of the setup). A short demo video (1'56") can be seen at: <http://toblinkornot.wordpress.com/>

DISCUSSION AND CONCLUSION

To blink or not to blink seeks to amplify the consequences of blinking, so as to make them clear to the spectator. The idea is that the spectator will pay for these moments of fleeting disinterest by losing track of whatever they were watching. The spectator, made aware of this trade will be left with a dilemma: if they are truly interested in what they are watching, they will force themselves to keep their eyes wide open as long as they can (the only way to avoid disruptions producing significant gaps in the story). However, the more attention they put on the video, the less conscious they become of their natural body attitudes - and they may blink inadvertently. If, on the contrary, they succeed in abstaining from blinking, they will still create gaps in the story, this time *attentional* gaps because of the effort that this unnatural attitude require. After a while, **the spectator is forced to conclude that their organic body plays a fundamental role in modulating visual content** and that as observer, they are neither innocent nor passive. They have to *choose* how they want to see the world. To blink or not to blink? After this experience, the spectator may look at the world with different *eyelids* - existentialist eyelids so to speak.

ACKNOWLEDGEMENTS

The authors would like to thank Jacqueline Steck for sharing initial code for blink detection.

Copyright is held by the author/owner(s). *ISMAR'10 Workshop – Devices that Alter Perception (DAP 2010)*, October 13th, 2010.

This position paper is not an official publication of ISMAR'10.

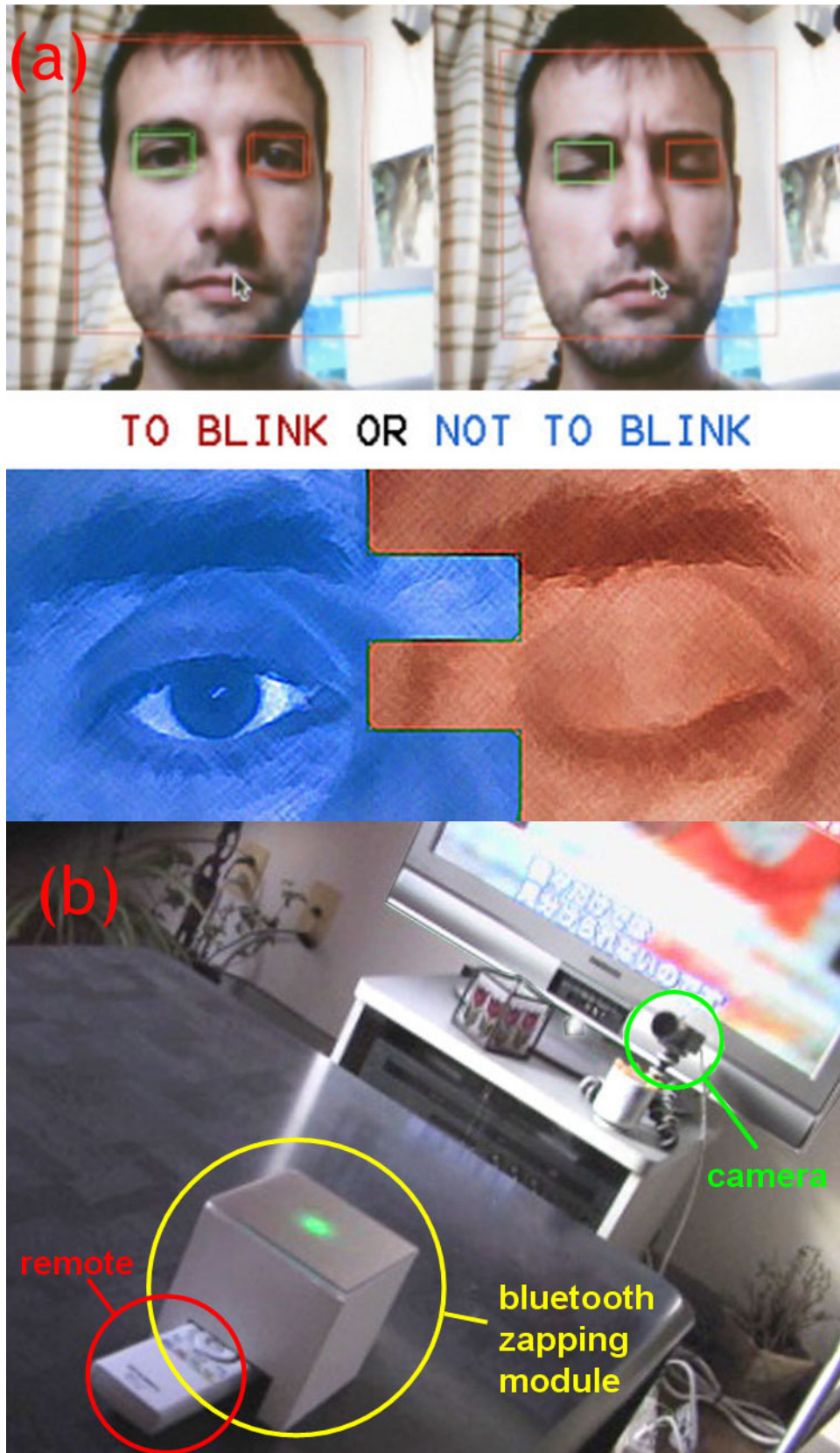


Figure 1. To Blink or Not to Blink installation setup. (a) blink detection using openCV and Haar-classifiers (coded in C++ on openframeWorks). (b) the setup including a camera, and the bluetooth zapping module that sits on top of an universal remote controller