Exquisite Corpses that explore interactions

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Abstract

Inspired by the Surrealist technique known as exquisite corpse, we investigated a novel method for exploring low-level interactions. By creating a video collection of input actions and output reactions, we created a tool that allows quick video sketching of interactions. Designers can mix and match different actions, and quickly see the results. We present three examples and conclude with our lessons learned from using this technique.

Keywords

Interaction design; exquisite corpse; design technique; sketching; appropriation.

Sketching and animating sketches

According to Buxton [2, p.7], sketching is, "*a fundamental tool that helps designers express, develop and communicate design ideas, and a critical part of a process that begins with idea generation, to design elaboration, to design choices and ultimately to engineering*." Buxton argues that a sketchbook might be the most widespread sketching tool used by
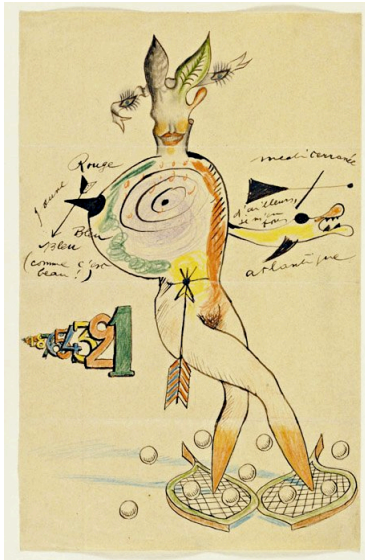
Figure 1. Exquisite Corpse by Y. Tanguy, J. Miro, M. Morise, and M. Ray, 1927.

designers from all design disciplines. It is a cheap, quick, accessible and productive method.

Sketches can show transformations, movement and timing (for example in storyboards) that can be enhanced through use of video. Buxton proposes linear video [2, p.209] as a way to show design qualities of transformations and interactions. Similarly, Fallman and Moussette [3] explore the potential of using stop motion animation as a method for sketching interaction. Stop motion animation is realized by animating a sequence of pictures where objects move slightly between each frame, creating the illusion of movement. They argue that stop motion animation is more than a presentation tool; in fact, the process of making these animations can help generate new ideas. One aspect is that making changes, adjustments and corrections are possible due to the editing capabilities of the process (arranging collection of pictures).

Our exquisite corpse approach builds on this use of video and simple editing techniques for sketching. We propose the combination of video that focuses on specific actions and detailed movements of an interaction with stop motion animation benefits of quickly exchanging parts of a montage to enable discovery and exploration.

In this paper, we explore how the exquisite corpse approach can be used as a means to investigate interaction qualities and design possibilities of what we refer to as low-level interactions. We define low-level interaction to be manipulations of objects and systems by people that are below the level of tasks or routines. In other words, the most basic of interactions such as *holding* might serve a task like drinking from a cup.

This research is part of our on-going study of everyday design and appropriation [4], in which people creatively design and re-purpose systems and artifacts through their everyday use. We have found in our studies that the simplest interactions like folding, stacking, hanging, and so on form the basis of repurposing and appropriating tangible artifacts and systems.

Our aim is to report on an experimentation of designing low-level physical interactions as a way of exploring compelling interactions that could eventually seed appropriations. The goal of this paper is to report on our experimentation with our exquisite corpse technique. We present three examples and analyze what we learned from this method.

Exquisite Corpses

The exquisite corpse technique was first employed by the Surrealists in 1925, known in French as *cadavre exquis*. André Breton describes: "Le cadavre exquis *consists of having three people in succession draw the constitutive parts of a figure without the second being able to see the work of the first, or the third the collaboration of the first and second"* [1, p.42]. The result typically did not make any sense, rather it was a means for finding unexpected combinations and extraordinary images that might lead to insights into our unconscious or dream worlds (e.g. fig.1). The method could also be textual to create non-sensical sentences, following the structure 'subject – verb – complement'. Exquisite corpses are an example of how collective work can be creative and poetic. Here, we present the method of exquisite corpse with video segments, for the purpose of exploring low-level physical interactions (actions and reactions) in interaction design.
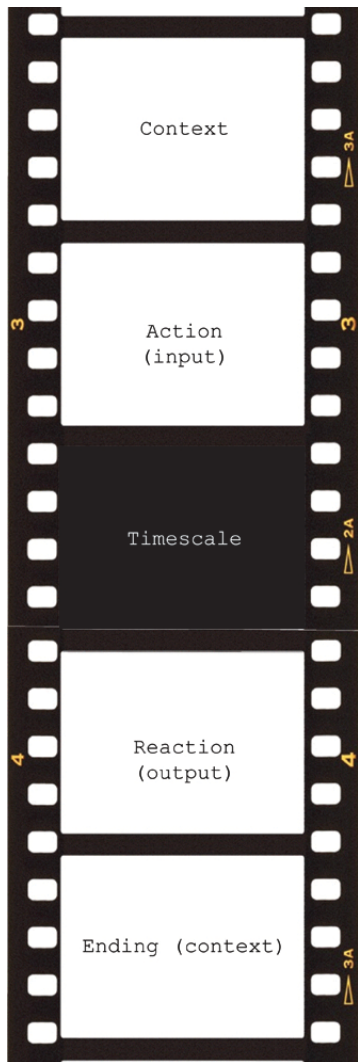
Figure 2. Structure for the Video Exquisite Corpses. Each frame represents a sequence in the montage of the video.

Technique

For our adaptation of the exquisite corpse, our process was as follows. We chose an artifact we wanted to explore. This object could be an everyday object, or a simple prototype or form we created. For most of our experiments, we used a large rectangular blue felt cushion (40 x 40 x 15 cm).

We began by listing the types of action that we could use as input for an interaction with the object. Examples of input actions include: press in the center of the cushion with one hand, puncture the cushion with a metallic pin, stand with two feet on the cushion, or talk or scream at the cushion. This list did not need to be exhaustive; we used it simply as a starting point. We generated a similar list of possible outputs – how the object could react to stimuli. Examples of output reactions include: the cushion reacts in a cause and effect manner, i.e. moves when pushed (in varying tempos), the cushion shakes, a bump grows on the surface of the cushion, or the cushion emits a sound.

The next phase was to videotape every segment. We started by filming all of the input actions. Importantly, we added more input actions, as more ideas came to us through the process of acting out our initial input actions. We videotaped with a range of framing techniques, including wide angles to define the context of the action and close-ups of a hand, arm, or a part of the body that was touching the artifact. Similarly, we videotaped each output reaction from our list and new ones that emerged. In some cases, we used types of puppetering for moving the object. For example, we used fishing lines to pull objects, and we vibrated objects from under tables hidden from camera view.

We also explored different contexts, given that actions and reactions have different interpretations in different contexts. We used three settings: an apartment, a log cabin, and a university lab. Context shots were either still photos or video segments. Lastly, in post-production we determined the timescale for each output reaction.

We imported all the video segments and the pictures in iMovie. We organized folders by context, input actions, and output reactions. Once this was done, we were able to start putting together exquisite corpses of our interactions. The structure of each video was always the same: context image or sequence, input action, timescale, output reaction and ending context sequence (fig.2).

We videotaped over twenty interactions in each of our three context settings. This quantity created a large collection of segments to draw from in the creation of the movies. The goal was not to reflect too much on the segments we put together, but to try a lot of them, almost in a random fashion. We also played with the speed of the video, to slow down or speed up the actions we originally filmed. In order to play with timing and delays, we were also able to add titles indicating how much time has passed between the input and the output actions. We added sound (from the computer or recorded some ourselves) and background music to help create a convincing video sketch.

Findings

Timing
The first example is a movie where we assembled a logical sequence of interactions (fig.3). We open with an image of a blue and red cushion on a sofa in an

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Figure 3. Playing with timing and speed. The still images cannot represent authentically the movements in the videos.

apartment. The first clip is a finger pressing on the surface of the blue cushion. A screen title reads: "30 minutes later". The next clip is a close frame of the surface of the cushion pushing back where the finger was pressing earlier. The sequence ends with a picture of the cushion on the sofa. In this sequence, the compelling interaction can be attributed to the logical, but ambiguous relation between input and output. The timing adds some ambiguity to the interaction and might arouse curiosity. This example shows that by changing the timing between input and output we can create different qualities of interaction. If the reaction was immediate, the design qualities could be playfulness and responsiveness. If the reaction slowly appeared or was apparent only after a day, the qualities would be different. Mystery and ambiguity would dominate and playfulness would almost disappear.

Speed
In the same example, there are design qualities that can be observed in the mirrored effect of the inward pressure of the finger, and the outward pressure from the cushion of a reaction. We adjusted the speed of each of these two sequences to mirror each other as much as possible in order to accentuate the relationship between the two actions, even though they are separated by thirty minutes. The exquisite corpse technique allowed for editing each sequence separately in order to explore the effects of speed and duration.

Context and focus on the action
The context sequences in the videos aim at situating the interactions. Context shots help build a narrative and can foster other ideas for diverse compelling interactions. However, because of the random matching

of sequences, it happens that the context does not always fit with the interaction sequences. Our second example (fig.4) starts with a picture of the cushion on a sofa in a log cabin. Next, a pair of feet enters the frame and pushes on the cushion momentarily then disappear. There is no delay between the input action by the feet and the reaction. The cushion is on a table, vertically placed, and slowly falls down to reach a horizontal position. The last picture is the cushion on the floor next to a low table with plants – in a city apartment. Despite the randomness of the contexts, we were still able to focus on the qualities of the interaction (e.g. the speed of the reaction to the pressure of the feet on the cushion and how quickly it was distorted and then flattened out again). This type of discovery was made possible only by the nature of the exquisite corpse technique.

Related to the ambiguous context sequences, we present here another way to focus directly on the interaction yet still explore context (fig.5) The first sequence shows a university lab. The next frame presents someone putting a red pillow on top of the blue cushion and resting on top of both of them with their elbow. The next day, the cushion is on a table in a simple setting in motion moving away from the camera in a mostly linear movement. The final image is the cushion on the checkered sofa (from the log cabin). This video does not clearly represent all the steps that could happen between the cushion moving from sofa to table to sofa (and moving from one environment to the other). In this case, the scenario is left for interpretation, but the qualities of interaction such as how the cushion moves slowly and steadily on the table are present and explicit. The fact that the reaction is presented in a very simple environment brings

Figure 4. Playing with context.

awareness to small details about the movement, such as the small shaky bumps in what seems a regular movement. Because we filmed in a university lab, we were able to create simple spaces where we could interact with the cushion. The exquisite corpse technique allowed us to present simple interactions outside of context, but to add context at the beginning and ending of the video.

Fluid videos
Adding a common effect to the clips of a same movie and adding background music helped create a more fluid experience for the viewer. We experimented with fading the frame of the images, highlighting the complete images, using 'sketch' filters, and more. The filters generally allowed us to break the realism of the clips we filmed, and helped to enter a more creative space for interpreting the movies

Analysis of the exquisite corpse technique
This research aims at presenting a new method for designing low-level interactions. In this section we present opportunities and limitations of this method.

Opportunities
- *Chance as a creative way to generate ideas*: As shown in the examples, *chance* played an important role in the discoveries we made about designing low-level interactions. By seeing randomly combined input actions and output reactions as complete interactions that we had not planned, we found creative ways to spark more ideas. In fact, in 1993, de Bono [3] proposes to use *random input* as a way to surpass the design fixations designers sometimes come across. When designers are stuck with the first idea they find, the random input technique pushes them to place the

problem or the idea in context, in relation to a randomly chosen word. Similarly, in the exquisite corpse technique, we saw that randomness created opportunities for chance to bring new waves of ideas for creating low-level interactions with the blue cushion.

- *Interchangeability of the sequences*: The multiple segments of video offered an opportunity for mixing and matching parts. Similar to the stop motion animation [3], it was simple to change parts of the movie and to replace them with other sequences. We also found that it was easy to film a missing sequence and to add it to the movie if a new idea emerged. This happened particularly when editing the videos, and by seeing combinations of clips. The different segments were filmed with different camera angles. Wide views help set up a context for the interaction to happen, and close up views allow for focus on the particularities of the action, reaction, and the design quality of the movement; and by extension the interaction.

- *Quantity:* Like most sketching techniques, one key to success is to aim for quantity over quality. The more videos produced, the more ideas can be generated increasing the likelihood of good ideas or examples emerging. Once a first phase of ideation is done, designers can choose the best ideas and start exploring them more in depth.

- *Structure*: The consistent structure of the videos allowed for comparing the videos and changing parts of the videos to create new ideas. Jones, author of essays about design methods in the 1970s [6] proposed the use of randomness and chance to find new ideas. However, he precisely mentions that it is necessary to have a structure to achieve randomness. He mentions that the fact that you can access chance and bypass

Figure 5. Focus on the action

the things you want to create yourself is the quality and advantage of this technique. In our exquisite corpses technique, we present a structure, but still lack complete randomness in the choice of clips we put together.

▪ *Inconsistencies and impreciseness*: Similar to the original exquisite corpses created by the Surrealists, we found that inconsistencies in the video were a great way to find ideas that would not come to us otherwise. The exquisite corpse technique should be understood as a sketching tool, and the impreciseness of the images and the montage are part of the result and can be starting points for more ideas and multiple interpretations by designers. Gaver, Beaver and Benford have championed the idea of using ambiguity and inconsistencies as a way to impel personal sense making and "interpretative engagement" [4, p.238]. We argue that by allowing 'glitches' and 'errors' in the videos, we increase the likelihood of provoking different thoughts and ideas by designers and viewers.

Limitations and future work
In the current version of our technique of exquisite corpses, we see that the choice of clips is not completely arbitrary, due to the use of software for editing movies. We believe it could be beneficial to have a system that can help reduce the conscious decisions in the sequence choice in order to increase surprising and unexpected combinations.

Moreover, we realized that the importing and exporting of video sequences could be time consuming. In order to reduce the time editing, we propose to separate the scenes at the moment of filming.

Conclusion
Our goal was to develop a method that is expressive, flexible, and fast to help us design for low-level interactions: the exquisite corpse technique. Chance and discoveries are part of the process of stumbling across ideas that would not normally have occurred. The structure of the videos helped us keep a methodical approach to creating surprising combinations. While this project was conducted with a focus on everyday design, we believe it could be used to sketch and explore other types of interaction.

Acknowledgements

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