Manipulating A Dissociative Bond With Out-Of-Body Experience Avatar In Virtual Reality

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ABSTRACT

It is commonly known that it is easier to be more frank with people online, be it positively or negatively. "That avatar on the screen is not me" is a common conception among users of their online representations. But what if the avatar on screen is a real-time reflection of the user? Will the user still have a dissociative bond with the avatar, or is the representation convincing enough that there is no increase of dissociation levels. This research explores whether dissociation levels can be manipulated by means of an out-of-body experience. Furthermore, it studies whether the user acts differently while in an out-of-body experience. For this, OpenIMPRESS, a Virtual Reality telepresence system, is used to test dissociative features in a one-on-one interaction. The study compares out-of-body against in-body experience to determine if there is a statistical significance between the two. Positive results would mean that this is a promising way to manipulate dissociation levels with one's own avatar and may lead to applications to help people suffering from this disorder in the future.

Keywords

Virtual Reality, Dissociation, Out-Of-Body Experience, Avatar

1. INTRODUCTION AND BACKGROUND

Following is a study on whether forms of dissociation can be manipulated with one's own image as avatar in Virtual Reality (VR). One's own image as avatar in VR is realized by creating an out-of-body experience in VR. This experience is a perspective wherein someone can see his/her own body from the outside in real-time. Figure 1 visually describes the perspectives out-of-body and in-body experience. Both these perspectives were used in the research to create a comparison for dissociation levels and behaviour. More on that will be discussed in section 1.9.

To understand the choices made throughout the research, there needs to be an understanding of different forms of dissociation and how to measure it. In sections 1.2, 1.3, 1.4, different forms of dissociation are discussed to get a grasp on what dissociation entails. Sections 1.6 and 1.7 elaborate on the different measurement tools that were used, after which the goal of the research is explained accompanied by the research questions.

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1.1 Virtual Reality Advantages

Immersive VR provides the opportunity to create both the out-of-body and in-body experience and is therefore applicable for this research. It creates new perspectives in one-on-one interactions which might lead to interesting developments in these interactions. Blascovich states that VR is the future's tool for psychological experiments due to "the experimental control and realism, ability to replicate, and representative sampling"[8]. According to Loomis, "Virtual Reality's primary advantages are affording more ecological validity without compromising experimental control and allowing the decoupling of variables that naturally covary"[13]. Concluding from Blascovich and Loomis, VR is a controllable tool which adds realism without compromising necessities for test validity. It not only has the ability to provide both out-of-body and in-body experience, but is a capable experimental tool as well.

1.2 Dissociation In Cyberspace

Many papers claim that online representations of ourselves (avatars), be it a character in a game or a chatroom account, can lead the user to believe that this representation is not really him/her. In other words, the user has dissociative bond with the avatar. The book "Psychology Of The Digital Age" by John Suler clearly describes this effect[16]. "When acting out hostile feelings, the person doesn't have to take responsibility for those actions. In fact, people might even convince themselves that those behaviours 'aren't me at all.' In psychology this is called 'dissociation'." Suler states that the actions done by the avatar can be interpreted as not the user's own actions and therefore the user is not accountable for them. Because of this dissociation, it can be easier to say or do things online to other people, even when hurtful. E.g. Raychelle found that cyberbullying is easier than traditional bullying as it is not face-to-face and people tend to be more elaborate online[12].

There are undeniable problems with user-avatar relations, among which dissociation. However, there is yet to be a conclusive study on whether there is an actual difference in level of dissociation and behaviour when the user is represented by an avatar which is actually the real body of the user. Can we manipulate the dissociation by putting people in an out-of-body experience? To understand and substantiate the upcoming claims, first, known forms of dissociation and manipulation are explained.

1.3 Body Dissociation

To manipulate forms of dissociation, there are some examples that illustrate the feeling of it in a very basic way. One is a situation in which the arm does not receive blood for a longer period of time. The arm goes numb and is not able to feel anymore. The arm now no longer feels as part of the body, therefore the body-ownership of the arm seems absent. Another example is the rubber hand illusion[9]. One of the hands of a test subject is hidden, instead, the subject sees a rubber hand. The researcher will stroke or poke the real and the rubber hand. The brain will associate with the rubber hand over time. When asked to perform a task with the real hand, the brain will coordinate that task from the rubber hand's position, resulting in an uncoordinated execution with the real hand. In this case, the mind associated with the rubber hand and dissociated with the real hand.

1.4 Dissociation As Psychiatric Condition

Dissociation (disorder) is a lot more complex than the examples mentioned before. There are many types of dissociation, including dissociation disorders. The American Psychiatric Association describes and groups all the different types of dissociative disorders[10]. Dissociation entails the experience of not feeling attached to surroundings, emotions, reality and yourself. These types of dissociation cannot (or are very hard to) be reproduced as this works on the psychological level of a person. However, it gives insight on how dissociation works and what the appropriate measurement tools are.

1.5 Dissociation With Avatar

The dissociation someone can have with an online avatar however, should be reproducible. As long as the online avatar representing the user is seen by the user in a so called third-person point of view, which creates the out-of-body experience, the online avatar's behaviour or appearance does not matter. This is because it is only about what the avatar represents. It represents the user in any shape or form, causing the user to have a connection with the avatar, while the "that is not me" feeling still persists for some people. Therefore, transformed social interaction could play a role in manipulating dissociation with an online avatar as well. For example, Bailenson explains what effects appearance and behaviour transformation can cause in an interaction[5]. While that is something outside the scope of the research, it is still interesting whether this can play a part in manipulating dissociation with avatars. Bottom line is that it is still unknown to what extent dissociation can be manipulated with an avatar.

1.6 DIS-Q As Measurement Tool

In 1993, van der Linden et al.[17] made up a measurement tool to measure levels of dissociation symptoms. The resulting DIS-Q is a questionnaire based on four different facets of dissociation disorders. Identity confusion and fragmentation, loss of control, amnesia, and absorption. The questionnaire consists of questions probing these four categories. Especially the first and second category denotes the dissociation with a VR avatar that is desired. This is because identity confusion and fragmentation and loss of control measures the desired "that is not me" feeling the most direct. In section 2.5 the questionnaire based on the DIS-Q will be explained.

1.7 Proxemics Behaviour As Indirect Measurement Tool

Apart of measuring dissociation aspects by means of the DIS-Q, body language can be an indicator for avatar dissociation as well. Proxemics will be used to trigger a reaction from the test subject. According to Andersen[3], it is very uncomfortable for people to be intruded in their personal space. Such event is mostly followed by the person in question backing off. On that basis, the test subject is submitted to intrusions of space during the experiment. This stimulates the expected reaction to back off and regain personal space. Whether the subject reacts to this intrusion is used as an indirect measurement to indicate a form of dissociation. If the subject backs off, it indicates that the subject bonds with the avatar to a level where it is still uncomfortable for the subject to be intruded. If the subject does not react, it may indicate a form of dissociation as it may feel that the avatar's space is intruded, not that of the subject's.

1.8 Research Goal

The key of the research is to explore the different factors dissociation has, comparing this with avatar dissociation, resulting in more understanding and therefore more options to use this for possible applications. Training people with a dissociative disorder is a possible application, as it is already been proven that an out-of-body perspective in VR is a viable training method according to Bailenson[4].

To explore the levels of dissociation, OpenIMPRESS is used to visualize the user's avatar in VR. The avatar is the user's own body captured by cameras. Therefore, the avatar looks and does exactly the same as the user, but with the user watching this from a different perspective, creating the out-of-body experience. The setup involves interactions and tasks with another person. Different aspects of dissociation were measured and differences in behaviour were noted during and after the session. Further explanation of the test setup will be elaborated in section 2.

For the research, the focus lies on whether dissociation with an avatar can be manipulated by using out-of-body experience in OpenIMPRESS (see section 2.1). The goal is to discover whether this is possible and if it triggers different behaviour from the users. To make this concrete and measurable, the following research questions were composed.

1.9 Research Questions

1. To what extent can we manipulate dissociation between a person and avatar in an out-of-body experience in comparison to in-body experience? (RQ1)

2. Is there a difference in behaviour during a one-on-one interaction in out-of-body experience in comparison to in-body experience? (RQ2)

    (a) Is there a difference in reaction to intrusion of personal space in an out-of-body experience in comparison to an in-body experience? (RQ2.1)

To make these research questions measurable, the hypothesis is that for both these questions, there is a meaningful difference between out-of-body and in-body experience. The null hypothesis is that there is no difference between the two. For RQ2, mainly reaction to proxemics is used to measure differences in behaviour, as stated in RQ2.1. However, more focus points for behaviour differences are observed as well. More on that will be explained in section 2.5.

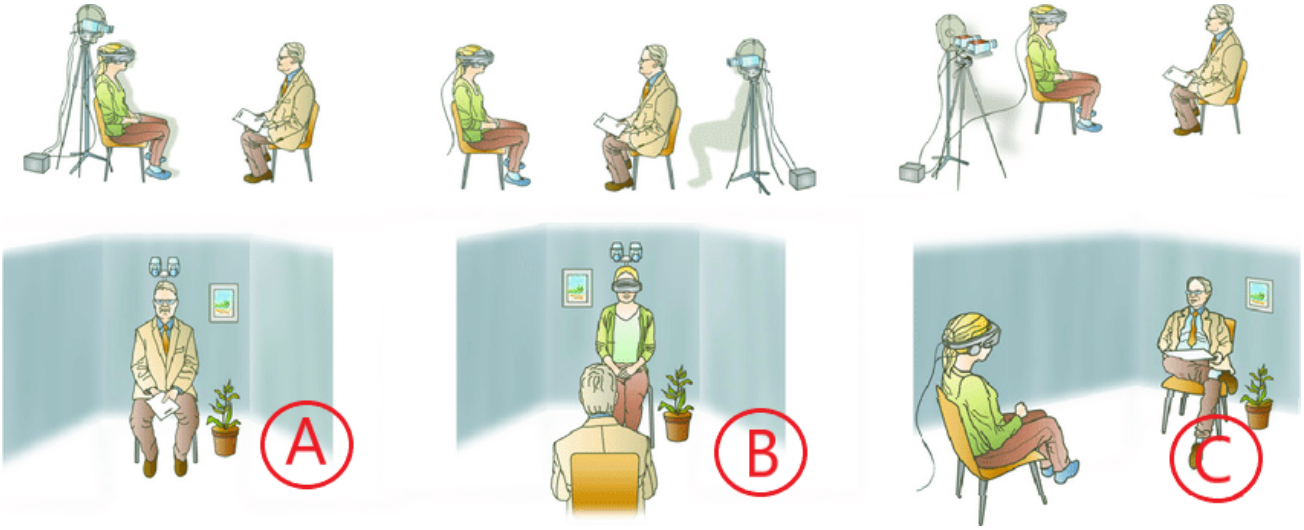

Figure 1: Schematic that visualizes the different perspectives. The upper figures represent the setup and the lower figures represent what the test subject sees in VR. Figure A represents the in-body experience, the test subject sees things normally. Figure B and C represent the out-of-body experience, wherein the test subject sees the setting from a different perspective[7]. In the research, perspectives A and C were used.

2. METHODOLOGY

The following section will describe the different methods used to realize the research. It describes how the research was conducted, the test setup design choices and what measurement tools were used. All are scientifically substantiated.

2.1 OpenIMPRESS

With the invention of VR, there have been studies on how VR can be used as a telepresence system. A telepresence system is a system which makes the user feel present, appear present and have influence in another location. Many research routes have already been taken regarding social and physical telepresence systems[11, 6]. Other telepresence systems, like the holoportation device[14], are created and used as well. OpenIMPRESS is such a telepresence system.

OpenIMPRESS is designed by researchers of the University Of Twente (UT). The basic setup of OpenIMPRESS is a Kinect camera, VR goggles, working together with Unity[1]. The Kinect camera captures a real image which is transferred to a virtual space created in Unity which can be perceived with the VR goggles. In other words, the virtual space is an actual real space or part of a real space captured by the Kinect camera and perceivable in VR.

OpenIMPRESS was designed as a telepresence system, but it can be used differently as well. The image recorded by the cameras does not necessarily have to be transferred to another location. It can also be presented to the person who is present in the same space wearing the VR goggles. This creates a strange but interesting situation wherein the user can look at his/herself in real-time in VR. It has the ability to easily create different perspectives of a real life situation in VR and is therefore very suitable for creating the desired out-of-body experience.

2.2 Test setup

The test setup consists of a virtual environment, test subjects, tasks/topic of conversation for the subjects, instructions, questionnaire and consent form. The virtual environment was created in Unity[1]. That said, it only consists of the real image captured by two Kinect cameras, while the different perspectives (out-of-body and in-body) were created in Unity. The setup included two Kinect cameras, capturing the desired space of the room from the side from two different angles as seen in figure 2. This desired space was where the task and interaction took place. The image streams of the two Kinect cameras were coordinated to line up perfectly and create one total image. The reason that two Kinect cameras were used was to create a more complete front image as only one camera left many blind spots. Also, the image looks more real as more detail can be captured. If needed, this can be expanded further by adding more cameras. That would result a complete virtual environment that looks exactly like the real world. However, just the front image was enough for this experiment, as only one out-of-body perspective was used. The resulting image can be seen in figure 4.

The setup included two people, the test subject and the researcher. The setup revolved around the two people having a conversation, physical interactions, a task and feedback. To be able to measure a difference, half of the test subjects experienced the interactions out-of-body, while the rest experienced it in-body. This so-called between subjects test design was chosen because it is not desirable that the subjects undertake the test twice and learn from the first test.

2.3 Instructions Of Test

To recruit the test subjects, random people by means of snowball sampling were chosen from UT campus grounds. Before the experiment started, the test subject got an information sheet and had to sign a consent form. The consent form stated that the data gotten from the experiment can be used for the research and that this data will be anonymized properly. The subject can always decide to retract this. In that case, the data would not have been used for the research. For ethical purposes, the subject can decide to stop the experiment at any time as VR can make the subject nauseas or the negative feedback can be too hard on a subject. Continuing, the subject was filled in with what was to be expected during the test. Namely, the task that was laid out and that they would have a little conversation with the researcher. Depending on which

Figure 2: Kinect cameras capturing test setup from two angles.

Figure 3: VR goggles and blocks for task.

perspective, it would also be mentioned if the test is in out-of-body or in-body experience. Not too much was explained as most of the actions of the subject had to come from an unknowing state. After the test, the subject was asked to fill in a questionnaire, elaborated in section 2.5.

2.4 Tasks During Test

The subject was asked to put on the VR goggles, after which the subject was asked to move around for a bit. This made the subject more comfortable with moving around, limiting the restrictions in the proxemics test. The subject was also asked to give a high five, hereby verifying that the researcher was definitely solid and real. These first two steps had two purposes. First, to make the subject more comfortable with the VR goggles on. Second, by making them more comfortable, the proxemics test should have been less restricted. That is, it would be hard to test whether the subject is uncomfortable with intrusion of personal space based on backing off, while the subjects is uncomfortable with moving in VR. That is why the subject got a bit of time to grow accustomed to the VR perspective.

After growing accustomed, the subject was asked to build a building with different types of blocks to be seen in figure 3. This task was just to have something to have feedback on. While this was the case, the task was not too simple to have nothing to give feedback about, and not too hard that it would frustrate the subject. The subject was asked what he/she thought of the execution the task. Then, the subject received feedback on the building from the researcher and was asked the previous question again. This was either really negative or really positive feedback. Focus point was to see whether the subject would agree with the opinion of the researcher. Furthermore, the researcher moved really close to the subject during conversation periods. Both the negativity and the infiltration of the subject's personal space made the interaction intimidating. Here, the focus point was to see whether the subject was intimidated and took a step back. This would indicate that the subject still sees the avatar as his/herself.

Figure 4: The in VR out-of-body view.

2.5 Measurement tools

To measure the amount of dissociation during the test, a questionnaire was filled in to gain insight on the level of dissociation. The questionnaire is based on an existing one, altered to fit the scope of this research. The questionnaire is based on the DIS-Q[17]. The DIS-Q is for real life situations, while the desired questionnaire for this research must be applicable for dissociation with a VR avatar. Therefore, a selection was made from the existing questions and were altered into viable questions for this research. The selection consists of the DIS-Q1 questions measuring identity-confusion and fragmentation, and the DIS-Q2 questions measuring loss of control. The DIS-Q1 and DIS-Q2 questions lie closest to describe facets of dissociation desired for the research. Namely, most of these questions are about the "that is not my body" feeling and the inability to control the VR avatar. Also, these questions were altered to be applicable for the experiment. Mostly this meant transforming a question from a real life situation to the VR experiences. The questions of the two groups, DIS-Q1 and DIS-Q2, are mixed such that it is not obvious that there are two groups of questions, but rather one whole questionnaire. The resulting questionnaire used for the experiment can be found in appendix A.

During and after the test, the researcher noted the behaviour of the subject. During the test the focus point was to look at the body language, reaction to personal space intrusion and tone of voice. The expectations were that in out-of-body experience, the subjects would have a more neutral stance, react less to personal space intrusion and that there would be no change in the tone of voice. This would indicate forms of dissociation or the subject being more at ease when confronted with intrusion and intimi-

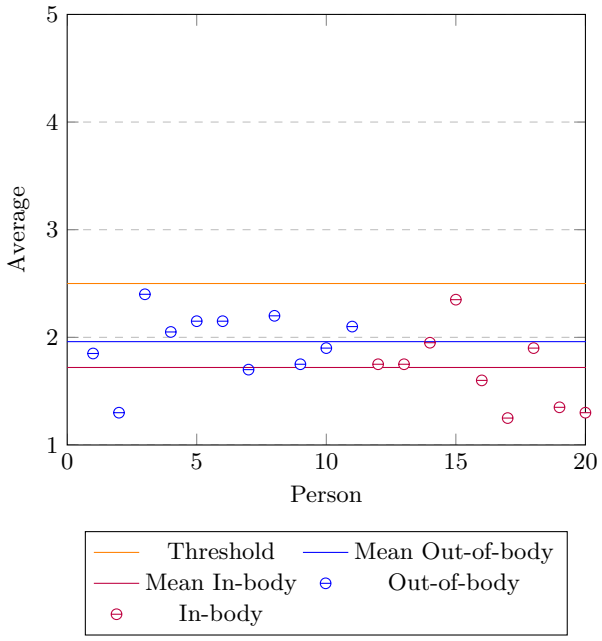

Figure 5: Visualizes the average scores. The orange line indicates the threshold that indicates someone has an increased chance to have dissociative symptoms. The means are the average score overall per sample group.

dation. In-body experience subjects would react more to personal space intrusion and could maybe show signs of (dis)approval to positive/negative feedback. This would show that the subjects care about external stimuli which would indicate lower dissociation levels.

3. RESULTS

Following are the results yielded from 22 test subjects. Figure 5 shows the score of the questionnaire per person. There is a clear distinction between out-of-body and in-body subjects and both have their averages displayed as well. The threshold at 2.5 indicates that any score equal or higher means the subject has an increased chance of having dissociative symptoms. The yielded results will be elaborated, after which the behavioural traits during the experiment are discussed.

3.1 Questionnaire Analysis

Now that the results are laid out, meaningful information can be calculated with the data. For each person it is possible to determine whether there is an indication of dissociation. According to Sno, when the average of the questionnaire score results in a 2.5 or higher, that person has an increased chance to have dissociative symptoms[15]. This threshold was not reached by any of the subjects, therefore no subject has a higher chance to have dissociation symptoms.

$$s = \sqrt{\frac{\sum_{i=1}^{N}(x_i - \overline{x})^2}{N-1}} \tag{1}$$

3.2 Confidence Interval

In figure 5 the averages are displayed. Each point in this graph has a certain distance to its sample group mean, which in formula 1 translates to $x_i - \overline{x}$. The sum of all these distances squared, divided by the number of samples $N-1$, square rooted is the sample standard deviation. The standard deviation can be used in a confidence interval. However, the normal formula for the confidence interval would be too inaccurate if the sample standard deviation is used. Therefore, formula 2 is used together with the Student's t-distribution table. This compensates for the sample inaccuracy. The unknown value 'c', for a certain $\frac{\alpha}{2}$ and amount of samples $n-1$, can be deduced from the t-distribution table. For a 95% certainty, $\alpha = 0.05$ and therefore $c = 2.228$ with degrees of freedom equal to $n - 1 = 11 - 1 = 10$. Now, the interval can be calculated according to formula 2. S and $\overline{X}$ are exchanged for their measured values, represented by their lower cases s and $\overline{x}$. Equation 3 is the 95% confidence interval for out-of-body estimation, equation 4 is the 95% confidence interval for in-body estimation.

$$(1-\alpha)100\%CI(\mu) = (\overline{X} - c \cdot \frac{S}{\sqrt{n}}, \overline{X} + c \cdot \frac{S}{\sqrt{n}}) \tag{2}$$

$$\begin{aligned} 95\%CI(\mu) &= (1.9591 - 2.228 \cdot \frac{0.30234}{\sqrt{11}}, 1.9591 + 2.228 \cdot \frac{0.30234}{\sqrt{11}}) \\ &= (1.7560, 2.1622) \end{aligned} \tag{3}$$

$$\begin{aligned} 95\%CI(\mu) &= (1.7182 - 2.228 \cdot \frac{0.32732}{\sqrt{11}}, 1.7182 + 2.228 \cdot \frac{0.32732}{\sqrt{11}}) \\ &= (1.4983, 1.9381) \end{aligned} \tag{4}$$

Equation 3 calculates the confidence interval of out-of-body subjects, while equation 4 calculates this for in-body subjects. The results state that with 95% certainty, the average score on the questionnaire of someone who was in an out-of-body experience, lies between 1.76 and 2.16. And, with 95% certainty, the average score on the questionnaire of someone who was in an in-body experience, lies between 1.50 and 1.94.

3.3 T-Test

To statistically substantiate whether there is a significant difference between the two sample groups, the t-test is used. The equation with its corresponding filled in values is displayed below.

$$t = \frac{\overline{x_o} - \overline{x_i}}{\sqrt{\frac{s_o^2}{n_o} + \frac{s_i^2}{n_i}}} \tag{5}$$

$$t = \frac{1.9591 - 1.7182}{\sqrt{\frac{0.30234^2}{11} + \frac{0.32732^2}{11}}} \approx 1.7931 \tag{6}$$

The resulting t-value is approximately 1.79, giving a p-value of 0.088085 when the significance level is 0.05. Because the resulting p-value is more than the significance level, the result is not significant at $p < 0.05$. Therefore, the null hypothesis can not be rejected, thus there is no significant difference between out-of-body and in-body experience regarding dissociation levels between a person and avatar.

3.4 Cronbach's Alpha

To validate whether the questions used in the questionnaire are consistent measuring dissociation, Cronbach's alpha was used to provide an indication. The Cronbach's alpha for the questionnaire is 0.749 and 0.627 for out-of-body and in-body subjects respectively. According to the

theory[2], a score between 0.6 and 0.7 means that the consistency is questionable, a score between 0.7 and 0.8 is acceptable. This means that the questionnaire's questions are somewhat consistent, but it could be much better.

3.5 Behaviour Discussion

The focus points for observation of behavioural traits during the experiment were, reaction to personal space intrusion, body language and tone of voice. Both body language and tone of voice observations yielded nothing regarding possible indirect dissociation measurements. There were some noticeable traits that may have influenced the experiment in some way. Test subjects going into the out-of-body experience tended to be confused by the perspective and needed some more help getting used to the environment. This awkwardness remained for the duration of the experiment, which resulted in the subjects not moving around without being instructed to. Test subjects put in in-body perspective tended to move around more. This may have played a part in the upcoming proxemics discussion. This awkwardness in coordination may have stimulated subjects to dissociate with their avatar more. However, as can be concluded from the results, it did not.

Subjects in the out-of-body experience had more difficulty coordinating their body. They tended to feel the shape of the building blocks more than using their vision. This led to subjects being defensive when receiving negative feedback. Most of the out-of-body subjects explained that it was hard to coordinate their movements. Most of the in-body subjects agreed with the feedback or were even more critical themselves. Both sample groups replied to the feedback, but no subject seemed to disregard the feedback, which would be an indication for possible dissociation with the avatar.

Proxemics behaviour was the main behavioural trait that was observed during the experiment. There was a clear majority in in-body subjects, 6/11, compared to the 1/11 out-of-body subjects that reacted to the intrusion of their personal space by taking a step back. This indicates that subjects in out-of-body experience do not feel that their personal space is intruded as much as the in-body subjects. Therefore, the subject does not mind the intrusion, because either the avatar's space is intruded and not theirs, or the out-of-body experience makes the intrusion less uncomfortable due to the subject viewing it from a distance. Both explanations confirm the expected results. If the subject felt the avatar's space was intruded more than their own, it confirms a form of dissociation with the avatar. If the out-of-body experience made the intrusion less uncomfortable, it confirms that the subject is more comfortable with handling intimidations of the researcher. Though this is a positive result, the subjects in out-of-body experience were not comfortable to move around as much as the in-body subjects. Together with the observed awkwardness in coordinating the body, could have influenced the subjects in their decision making in taking a step back when intruded. This is left up for discussion.

4. CONCLUSION AND DISCUSSION

The results were yielded from a research study where much improvement was needed for a more accurate conclusion. First, the calculated Cronbach's alpha was not as high as it needs to be. The questionnaire was on the verge of being unusable due to inconsistency and could definitely be improved. Question 9 from DIS-Q1A was misunderstood by many test subjects and needed explaining from the researcher. Together with some other questions, these were answered very differently by other subjects. Rephrasing and restructuring the questions might be helpful to achieve more consistency.

Second, by statistically validating the significance, the hypothesis was rejected. The difference in scores was too small for the difference between the two sample groups to be significant. However, the averages of the two groups indicate that the out-of-body subjects had a slight raise in dissociation levels over the in-body subjects. As this is the desired result, a bigger study with more test subject would maybe turn out differently. With an improved questionnaire and bigger sample groups, results might be more favourable for the hypothesis. However, this is only a speculation.

Although dissociation levels were not raised enough by just the out-of-body experience, the amount of test subjects reacting to personal space intrusion aroused curiosity. For future research, levels of intimidation and reaction can be measured in out-of-body experience. For this, VR moving comfort needs to be taken in consideration as well as a third sample group representing the people without VR goggles.

While the hypothesis seemed to have some promise, and there was a small difference between the two sample group's scores, the difference is proven to be statistically insignificant. Furthermore, there was hardly a difference in behavioural traits between the two groups. The only noticeable difference was the amount of people reacting to the space intrusion. This indicated that there is something that makes the intrusion less uncomfortable for people when in an out-of-body experience, though it does not seem to be caused by dissociation. All in all, there are still areas left up for future research.

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APPENDIX

A. QUESTIONNAIRE

Following is a questionnaire about the experiences you had in the Virtual Reality (VR) experiment. The questions are only about the VR experience, not your daily life. Note that the term 'VR avatar' just means the in-VR image of yourself. Please circle the answer that applied most to your experience. 1 = Not at all, 2 = A little bit, 3 = moderately, 4 = quite a bit, 5 = extremely. You are free to leave any question unanswered or ask the researcher if the question is unclear to you.

DIS-Q1

1. I have the feeling that my body seen in VR is not (really) mine.
2. I have the feeling that in VR, I am made up of two (or more) people.
3. It happens that I have the feeling that the VR avatar is somebody else.
4. It happens that I look at the VR avatar without recognizing myself.
5. It happens that I am determined to do something, but my body acts quite differently against my own will.
6. At times I feel a great distance between myself and the VR avatar's doings.
7. It happens that I have the feeling that other people, other things and the world surrounding me, are not real.
8. At times it seems that I have lost contact with my VR avatar.
9. It happens that I get the feeling that my VR avatar undergoes an alternation.
10. I wish I had more control over my VR avatar.
11. I wonder how I can prevent myself from doing certain things
12. I regularly have the feeling that everything is unreal

DIS-Q2

1. It happens that I catch myself (day-)dreaming.
2. There was a sudden, complete change in my mood.
3. It happens that I do something without thinking about it.
4. It happens that I am listening to the researcher and suddenly realize that I have not heard part of the whole of the story.
5. It happens that I get angry without wanting to be at all.
6. It happens that I feel confused.
7. It happens that I stare aimlessly without thinking about anything.
8. I lose every notion of time.