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Communication

Descartes' Error with Training for Dive Rescue

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Dedicated to Prof António Damásio on the occasion of his 80th birthday.

Dedicated to Jean-Yves Gascard.

Abstract: Introduction: While preparing for dive exams, divers are trained to perform rescue exercises. Currently, divers think they will manage and control their body at any time. Methods: At the bottom of the water, the student takes the instructor who simulates a sickness, up to the surface, by controlling the going up. Then, if the exercise is wrong, both divers go down and exercise again. If the exercise is successful, both divers go down to perform another exercise until they are tired or until they have no more air. Results: I discovered that there was a mistake in the preparation of divers for rescue training due to Descartes' error, "I think, thus I am", which is part of our collective memory. Going up and going down after a sickness simulation is a repetitive action of the body and going down is therefore part of the automatisms of rescue, which is very dangerous. Conclusions: The body is not necessarily controlled by the present thinking, and if divers forget sickness while going up in a real rescue situation, they will go down automatically because their bodies were trained like this. In addition, it is very easy to forget sickness. Divers should not go down after rescue, they should be on the dive boat or on the land. Descartes' error has to be reversed: "I am, thus I think" is right. The divers' rescue exercises must be simplified and divers should never go down after the simulation of a sickness.

Keywords: body; dive; rescue; danger; automatisms; cognition; descartes' error

Introduction

Currently, divers are thinking as follows: while training and presenting rescue exercises for the different levels of dive exams, divers have acquired techniques for rescue. Divers will be able to apply these techniques to act in the future, in case of sickness to save somebody. This way of thinking unconsciously means that divers control their body at any time because of the verb "applying and acting". In fact, what divers have acquired are automatisms for rescue during dive training. I realized that a repetitive action of the body becomes a habit of the body not necessarily controlled by the present thinking, precisely an acquired automatism. I discovered that divers make Descartes' error "I think, thus I am", as they think they can control their automatisms at any time. In this paper, I demonstrate that divers acquire the wrong automatism during their preparation for the rescue. The literature describes automatisms and the way to acquire them [1]. However, automatisms are mainly involved in solving problems related to elaborated human skills, such as acquiring skills with algebra [2], or language [3]. Automatisms within the body are less studied than those associated with diseases such as seizures [4]. Driving has been studied in relation with body automatisms [5]. It was discovered that driving on familiar routes led to inattention blindness for roadside features and that driving on familiar routes led to driving without awareness, which explains why drivers are most likely to crash at locations very near their homes [5]. It was demonstrated that acquired automatisms persist after complete cessation of practice [6].

Discussion

However, how is acquired automatism of the body triggered? For example, one of my friends told me that a Saturday morning; she took her car for going shopping. However, she went to work instead. How to explain this? She is accustomed to going to work every day with her car and to

training her body with this. The “D Day” thinking about going to shop triggered the automatism; she took the wrong way and went to her work instead because she was thinking to something else while driving, and then she realized her mistake: “what I am doing here?” This “D Day” happened to everybody (taking the wrong way because of the habit of the body). It is also very easy to forget “shopping” when your thinking and attention are driven elsewhere. This thinking (shopping) allows automatism to be controlled. Another example: One of my friends is a professional pianist, and she learned the piano part of Ravel’s trio. In this part, she has to execute a glissando. To avoid hurting the skin of her fingers, she learned the glissando by practicing it above the keyboard without pressing the keys. What do you think happened on D day at the concert? Moreover, the wrong automatism was triggered by thinking through reading the piece of music. An acquired automatism comes from the past and projects the body into the future unconsciously. Note that automatisms and movements of the body are much more rapid than the establishment of thinking and consciousness. Indeed, thinking is the most elaborate part of the body, and it takes time to think about something. Therefore, “Je pense, donc je suis, I think, thus I am” is wrong, and “Je suis, donc je pense, I am, thus I think” is correct, as demonstrated by António Damásio [7].

Now, let me detail the preparation for rescue by divers (I get level 4 diving, with FFESSM (Federation Française d’Etudes et de Sports Sous-Marins) and CNRS (Centre National de la Recherche Scientifique) diving club). All the dive federations (FFESSM, PADI Professional Association of Diving Instructors, CMAS Confédération Mondiale des Activités Subaquatiques) in the world are doing the same error. (Figure 1). Diver 1 is the instructor, and diver 2 is the student. Both divers start from the surface in A and arrive in B after a few minutes. In B, diver 1 simulates a sickness with his body (and emotions of course !), diver 2 rescues diver 1 and acquires the rescue technique from B to C while going up. At surface C, depending on the exercise, the instructor can briefly explain the mistakes from B to C or not. Then, both divers go down from C to D to perform the exercise again when it is wrong or another rescue exercise when the exercise is successful. The ABCD procedure was repetitive. Here, is the error, the segment C-D (going down) is associated with the rescue techniques and the simulation of sickness from B to C! I mean ABCD is the habit of the body, thus a whole acquired automatism. In real life, CDs should not exist; after a rescue, both divers are on a diving boat or on land. While discussing with divers, some think what they do in Figure 1 is similar to “style exercises” to get diving levels and that the reality of a dive is different. It is not understood how automatisms are acquired during training.

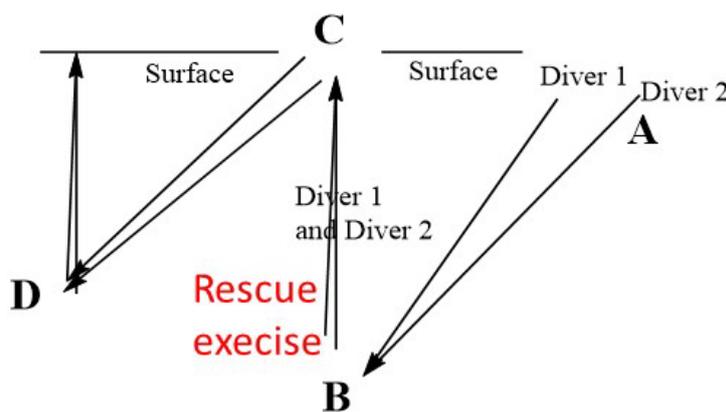


Figure 1. Rescue exercises of divers. Divers go up and down with their body, and segment CD is part of the automatisms of rescue from B to C.

3. Conclusions

By applying António Damásio’s theory to dive training, I conclude that how divers are trained with rescue is highly dangerous. They do not have the right to do any sickness, or they have to think about sickness every time they go up, which is difficult. For example, you can make a narcosis at the bottom, and you can be in good shape at the surface, leading to the forgetting of the narcosis and to the dive accident because narcosis triggers the automatism. Therefore, preparation of divers for

rescue has to be simplified without making repetitive actions of going up and going down. This would prevent diving accidents by avoiding the going down to be part of the automatism of rescue.

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