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## Ecologies of water, fluid boundaries and obesity studies

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Artist Amy Sharrocks' Museum of Water is a collection of publicly donated samples of water in individually-chosen bottles, and the stories and poems that accompany them. In this work, water is the message and the meaning, every-day and special, unique and identical. Currently, Amy curates over 200 such bottles, including water from a holy river in India, from a burst London water main, a melted snowman, condensation from a Falmouth window, a new born baby's bath water, and water from a bedside table said to be infused with dreams. A number of items in the collection have very direct human connection - Norwegian spit, three types of wee, two different breaths. Such samples highlight the easily ignored fact in day-to-day life, that humans are made up mostly of water, bounded within cells and organelles, and in constant flux, moving across tissues and responding to external cues. Within the body, it is boundaried against the outside world by the skin, lungs and gut, mostly retained but partly lost in breath, faeces, urine, spit, semen and blood.

The understanding of human bodily function has been hugely aided by analysis of boundaried bodily fluids, of which water is a prime constituent. Human bodies vary in their composition of muscle and muscular organs, and by subtraction, of fatness and bone, and isotopic variants of water have been used to work out body leanness and fatness, as well as total energy expenditure, all important to the physiological understanding of obesity. The water in Amy Sharrocks' Museum stands in bottles, some reminiscent of the vials of urine or spit samples from people involved in having their body composition and/or energy expenditure measured. These bottles of water capture meanings for people - some of the moment, some accumulated across time – sometimes in ways analogous to the scientific description, with time, place and provenance of collection. Like scientific samples, they capture a moment or an integration of moments, rather than process, movement, flow or change. They are static, and boundaried in ways that everyday water is not. But they always retain the potential to move and flow.

There are leaks and flows between bodies and the environments that surround them, as there are between disciplines that study obesity. Obesity has been studied using genetic, physiological, psychological, epidemiological, cultural, environmental, political, and economic frameworks, among others. A number of models, each from the perspective of a particular framework, have been developed which attempt to explain either existing rates of obesity, its emergence, or rapid increase. Increasingly, systems thinking has been applied to obesity. Systems approaches involve attempts at understanding how things influence one another within a whole. They are not new, since the study of ecosystems, which involves relationships among physical and biological elements within the environment, including water, goes back to the 1930s. Systems approaches to human organisation, social and political sciences emerged from the 1960s, and in biology through the rapid progress in molecular biology and the technologies that go with it, including computing, since the 2000s. Boundaries between fields of knowledge are important for their integrity (a body without boundaries would not be a body), but it is equally important that they should be leaky. The boundary work involved in defending science from non-science is often fiercely engaged in, as is that engaged in maintaining and reinforcing demarcations between fields of knowledge. But it is not helpful when engaging in the study of a phenomenon like obesity, which is ecological, transdisciplinary, and complex. Amy Sharrocks' Museum of Water deals with the mundane and the marvellous, the free-flowing and the fixed. It tries to catch what is tangible, embodied, obvious, but hard to catch in one's hands. Above all, it draws attention to how obesity scientists, social, physical and a-social, should approach their pool of study: with open hands, with fluid boundaries and technologies of mind and body to try to catch the uncatchable.