NANOSCOPIC INVESTIGATIONS
ESS/IAC/MALMOSTAD
SCATTERDANCE: NANOCSCOPIC AESTHETICS

SCATTERDANCE TALK
Jeannette Ginslov
At InterArts, Malmö, 6 April 2022

"When Lim and I paired up with Rofors, we had discussions about the spallation process, human embodiment, and technologies. This evolved into exploring human embodied interactions, using VR technology to simulate what happens during the spallation process that enabled us to image things that are much too small to be seen using regular microscopes or too fast for existing neutron facilities. […]" (Jeannette Ginslov, 2022)

The artistic residency and collaboration between media artist and researcher of Screendance, AR/VR media artist, and nuclear physicist Dr Emil Rofors, intends to discover how bodies, visualising techniques and visual media may be re-imagined, re-visualised and re-embodied, by exploring small-angle neutron scattering (SANS).

Providing a philosophy of Scatterdance
Scatterdance is an interactive *dance-technology* work that reconceptualises human movement into data or information through human interaction with a digital object, an avatar. See: https://youtu.be/Qc5ipBNGCGg

The work is an interpretation rather than a representation of the spallation process or SANS – small angle neutron scattering. This interpretation has not only enabled us, the team, to revisualize the process of SANS but has also allowed us to reveal how participants in our interactive work may explore their own subjectivity and agency through 'doing' *embodied experiences* with an avatar and visual media.
non-human vision as second-sight imaging
In other words, Scatterdance puts the human back into SANS, which uses *non-human vision* (Zylinska, 2017) processes, that post phenomenologist Don Ihde (2002) describe as *second-*

sight imaging techniques using ranges of the optical spectrum beyond ordinary human visual perception.

The insertion of the human into interfaces with technology has for me been a major concern of my research and practice, as digital technologies are increasingly becoming more present in everyday life, forming part of the way we live, change, and experience the world. However, many technologies and technological processes, like SANS, operate outside human experience and intervention. Nonetheless, SANS is connected to our lived experience as it uses material processes dealing with ways for example, to find medicines to rid the world of COVID. *Scatterdance* then, is a performative rendering of how technologies, materials, and our embodied relations with them, play a vital role in our lives.

embodied interactions/materiality

Scatterdance also reveals my artistic research that pivots around embodiment and performance, a methodological approach that produces an *embodied materiality* through the convergence of phenomenology and materiality. This it does by metaphorically replacing the normally nonhuman sample with a human, who embodies a humanlike avatar reacting to the neutrons flying toward her, to create unique scatter patterns on the detector board. Performing within this relational interface requires a shift in the perception of self and the relations that we have with technologies. Paul Dourish (2001) and Kristina Höök (2018) describe such interfaces and interactions with computer systems as *embodied interactions* as they have become part of our phenomenal *Lifeworld.* Embodied interactions however do not mean losing human subjectivity as this is entangled and co-present with the performance, and embodied materials.

re-embodiment
Here we embody interactions with interactive technologies without actually getting our hands on them. Ihde (2010) and philosopher Susan Kozel (2017) cite this as a *re-embodiment*, where there is an incorporation of technologies and materials that actually "*re-embody* our fleshy experience". *Re-embodiment* occurs through human-technology relations, everyday user experience that form unique relations along a continuum with the technology, allowing us to access new forms of embodiment beyond our 'naked' bodily senses. These human-technology relations are produced by "inter-relational and reflexive" experiences.

reversibility
From a phenomenological point of view, *Scatterdance* also provides a means of digitally encoding human agency and the sense of self. I'm here, in my body, but I'm also up there on the screen. I'm not separate from the data as I can see/feel myself performing through the avatar and I can see this relation in the scatter pattern in front of me, as I co-create with the

technology that sees me back. Kozel describes this using Merleau-Ponty's concept of *reversibility*: that is a "flowing relation with the world by means of the porous membrane between interiority and exteriority that is my perceiving body" (Kozel cited in Vincs, 2016, p.268). I am a body, seen as an object in the world but at the same I am also experiencing myself through my own body, which is experiencing the world and technologies that see me and my body back.

With this philosophical background I encourage you to create your own embodied materiality in the work, to explore a neutron choreography with the avatar and to create your own unique *scatter pattern* by 'doing' a *Scatterdance.* You're welcome.