

On the Question of Objects – “Imagined Field from the Deconstruction of an Apparatus”

Ben Bogart

14–29



This text is an artistic companion to the accompanying collages where complexity, ambiguity, emergence, and abstraction are emphasised. Through artistic practice I investigate the primacy of objects and their relations. Consistent with Barad’s Agential Realism, objects are constructed through their relations. This conflicts with a capitalist and colonialist view where objects pre-exist relations and are that which can be extracted, used and/or consumed.

The images herein are composed from fragments of photographs taken at a particle accelerator facility where fragment boundaries are constructed by a machine learning algorithm. Images are composed by placing fragments according to their relationships using a second machine learning algorithm that emphasises some boundaries and dissolves others. These layers of boundary-making are analogous to cognitive processes where the objects of thought are proxies for complex relations. This is the crux of our contemporary era; social and material complexity cause us to attend to objects at the detriment of the systems that allows those objects to be.

#object

#machine learning

#collage

#boundary-making

#photography

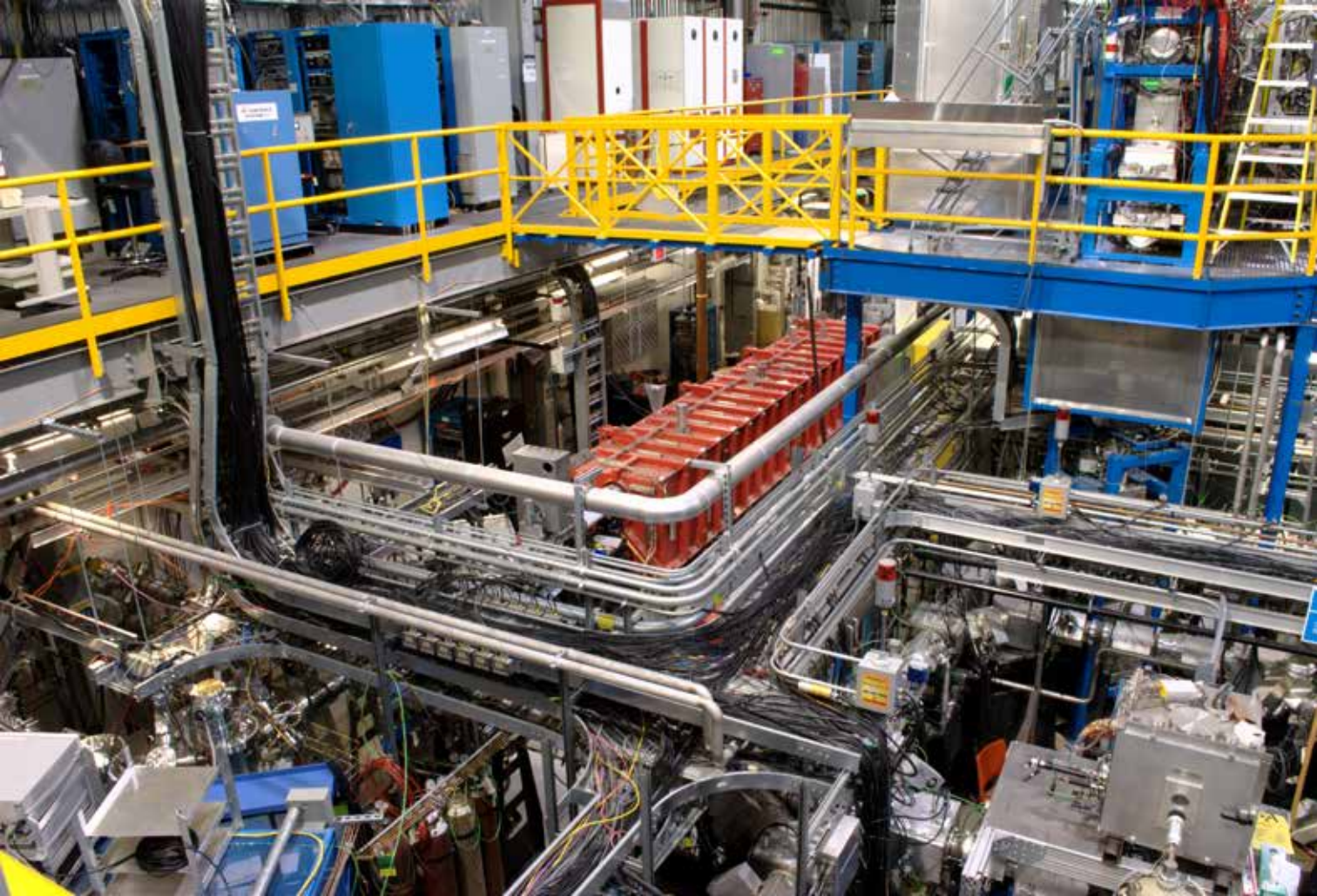


Figure 1: TRIUMF particle accelerator facility. Source: Ben Bogart.

Object

Through my practice, I have come to think of objects – objects being defined by demarcated boundaries – as constructed through intra-action following Karen Barad's (2007) *Agential Realism*. The consideration of objects as independent units is the bedrock of extractive capitalism. An object can be removed from its environment and those physical relationships (natural processes) that lead to its existence are excised. The object is re-contextualised (used, consumed) within a new set of processes. The relational history of the object is not lost in this excision because the value of the object is a direct result of its history. While not lost, extraction does conceal that history through the creation of a new understanding, context and use. Extraction constructs a new object through the imposition of a new boundary. The construction of objects through boundary-making is how we can comprehend anything at all: boundary-making is the basis of thought and matter. Objects are merely proxies for complex physical/relational processes that are packaged into tidy, predictable, conceivable, unitary elements.

Image

The 'apparatus' referenced in the title is the TRIUMF particle accelerator facility at the University of British Columbia. This apparatus is used to break hydrogen atoms into subatomic particles used in diverse physics and medical research projects. At its essence, I think of particle physics as the study of wholes in relation to their parts, i.e., the study of the boundaries of objects. The collages accompanying this text are works-in-progress created from a series of one hundred twelve photographs. As an example, see Figure 6, taken of the beam lines and their contexts at the TRIUMF facility. Each photograph is extractive; its spatial bounds (frame) are imposed by the lens and shape of the camera

sensor while temporal bounds (exposure time) freeze the dynamism of the site. The photographs are objects constructed by a history of intra-actions between camera, light and apparatus, where the camera itself is also an apparatus. The photographs are decomposed by a machine learning algorithm¹ that imposes boundaries along paths of discontinuous colour. This breaks each photograph into fragments constructed according to the peculiarities of the machine's naive (non-semantic, non-human) processes of segmentation where the machine's sense of an object does not resemble that of a living mind. The boundaries are emergent and follow from the intra-action of the photograph and the machine-learning algorithm. Large objects can be intelligible as photographic, while smaller objects approach gestures of mark-making or strokes of paint.

Collages are constructed by arranging these photographic fragments according to relationships such as colour (see detail Figures 2–4) and orientation (see detail Figures 7–12). The placement of fragments on the image plane is determined by a second machine learning algorithm² that may emphasise and suppress various boundaries. When fragments of similar colour are placed in proximity, their boundaries dissolve such that they blend perceptually into a larger object (for example, the yellow area in Figure 12). When fragments of dissimilar colour (or orientation) are arranged nearby, their boundaries are emphasized (for example, the boundary between blue and yellow regions in Figure 12). These structures emerge from the intra-action between/within the set of fragments and the machine learning algorithm. The viewer contributes additional boundary-making processes by recognizing some fragments as photographic and perceptually grouping areas of similar fragments. The work emerges from layers of boundary-making: from the physical apparatus, through photography, machine learning decomposition and re/composition, to the viewer's mind.³



Figure 2: Ben Bogart, *Imagined Field from the Deconstruction of an Apparatus, Work in Progress A*, 2020. Digital medium.



Figure 3: Ben Bogart, *Imagined Field from the Deconstruction of an Apparatus, Work in Progress A* (detail), 2020. Digital medium.

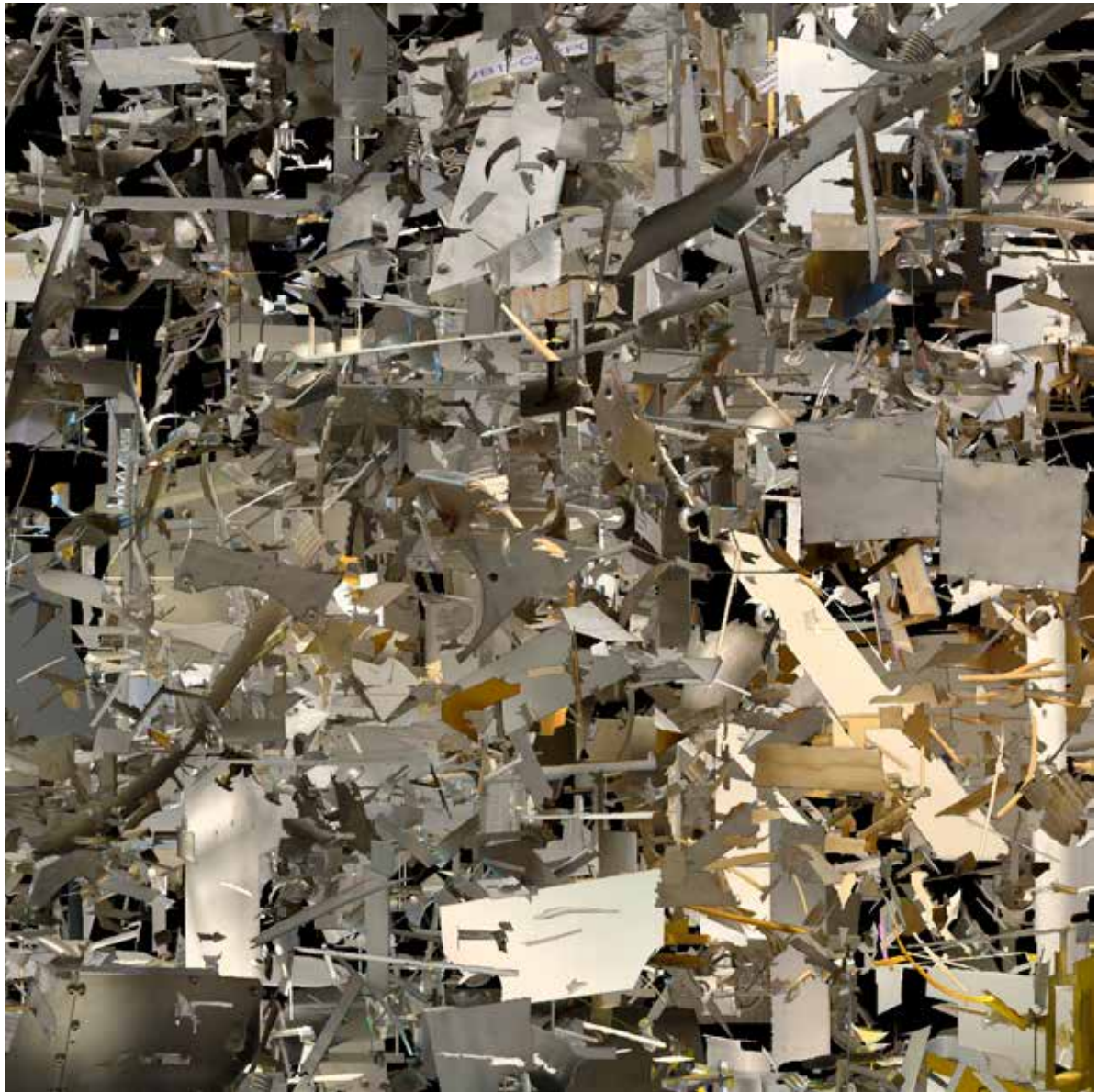


Figure 4: Ben Bogart, *Imagined Field from the Deconstruction of an Apparatus, Work in Progress A* (detail), 2020. Digital medium.

Figure 5 (pages 20–21): Ben Bogart, *Imagined Field from the Deconstruction of an Apparatus, Work in Progress A* (detail), 2020. Digital medium.

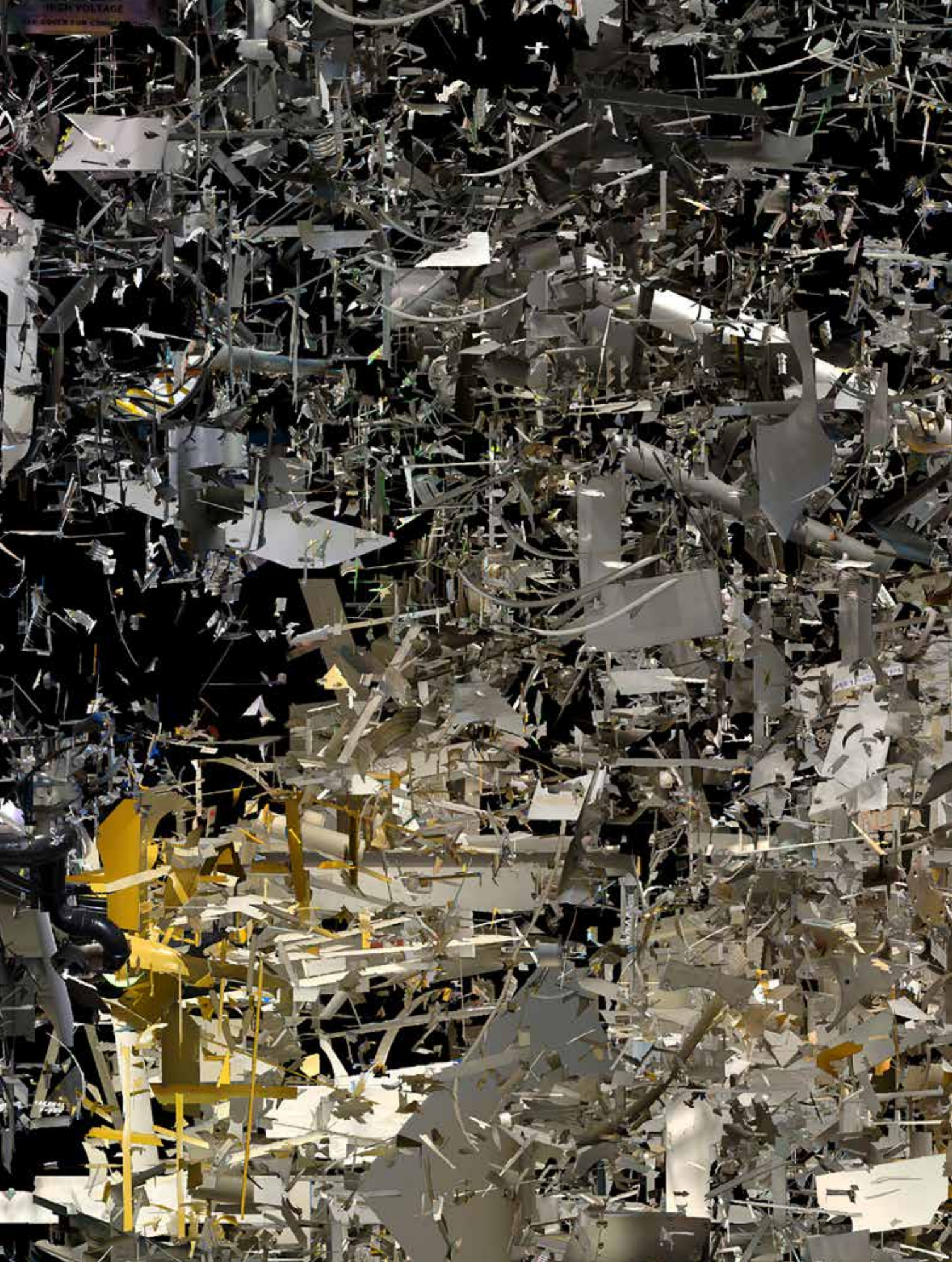






Figure 6: Ben Bogart, *Imagined Field from the Deconstruction of an Apparatus, Work in Progress B*, 2020. Digital medium.

Figures 7–8 (pages 23, 24): Ben Bogart, *Imagined Field from the Deconstruction of an Apparatus, Work in Progress B* (details), 2020. Digital medium.







Figure 9: Ben Bogart, *Imagined Field from the Deconstruction of an Apparatus, Work in Progress B* (detail), 2020. Digital medium.

Figure 10 (next page): Ben Bogart, *Imagined Field from the Deconstruction of an Apparatus, Work in Progress B* (detail), 2020. Digital medium.



Boundary

Thought is inherently extractive because objects constitute thought. Recognition situates the experience of the now in the experience of the past by constructing objects that persist in multiple contexts (moments in time). Perception, thought and imagination all involve systems of boundary-making processes that decompose and recompose objects. This is not to validate or condone the processes of extractive capitalism, but to highlight the importance of boundary-making in our relation to the world. By comprehending the world, we all intra-act such that we divorce processes and materials from their contexts and construct new ones.

Extracting/constructing objects from the environment changes the environment. This is the crux of our contemporary era; social and material complexity cause us to attend to the objects at the detriment of the systems that allow objects to be. By removing objects from the environment, we impose new boundaries that fundamentally change the object and environment. We constantly reconfigure the world and must be mindful of the new worlds that emerge as a consequence. Sex, gender, race, normality, ability, value, wealth, education, individuality, nation, religion are the fodder for individual and systemic boundary-making that include and exclude, amplify and suppress, centre and marginalise.

Acknowledgments

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Notes

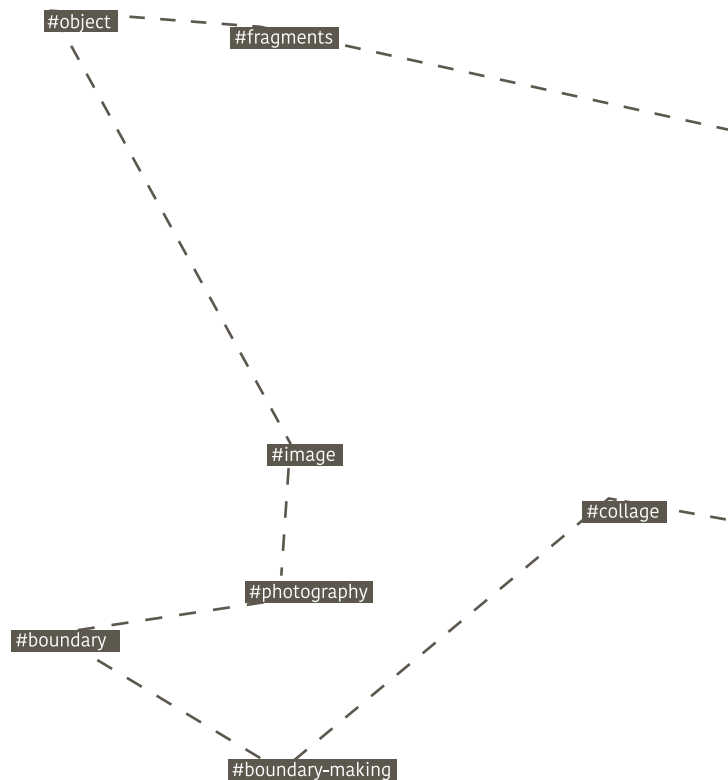
1. The Mean Shift segmentation Algorithm.
2. The Self-Organising Map clustering algorithm.
3. This list of components is excised from a broader system; the apparatus, the camera, the computer executing the algorithms and the viewer are also objects constructed through systems of boundary-making.

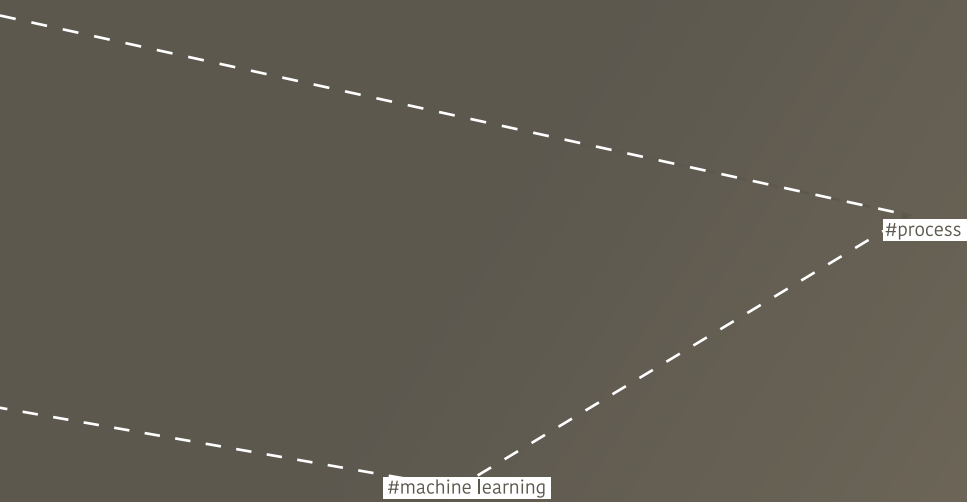
Bibliography

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Bio

Dr. Ben Bogart is a non-binary interdisciplinary artist working with generative computational processes and has been inspired by knowledge in the natural sciences in the service of an epistemological inquiry. Ben has produced processes, artifacts, texts, images and performances that have been presented at galleries, art festivals and academic conferences internationally. Notable exhibitions include solo shows at the Canadian Embassy at Transmediale in 2017 and the TechLab at the Surrey Art Gallery in 2018. Their research and practice have been funded by both art and research councils. Ben holds both master's and doctorate degrees from the School of Interactive Arts and Technology at Simon Fraser University. During their master's study (2006–2008) they began their artistic inquiry of machine learning and developed a site-specific artwork manifesting a cognitive theory of creativity. In their doctoral work (2009–2014) they made “a machine that dreams” that is a model of dreaming and a site-specific artistic work.





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