



Containment and Leakage: Notes on a General Containerology

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Abstract

In the article, we set out to develop the contours of a general containerology, interrogating containment as a technology and an ontological condition that shapes human and more-than-human relations. While exploring containment technologies as spatio-temporal devices of ordering vis-à-vis leakage, we nevertheless stress how containment inevitably remains contextual, provisional, and leaky at best. Addressing the selective permeability of containers, we also discuss the relation between contained interiorities and exteriorities as processes of articulations between milieus. We problematise the opposition and incommensurability between containment and leakage, and instead insist on conceiving them as co-constitutive. Ultimately, we outline an affirmative, positive take on containment beyond exclusionary inclusion, in contrast to prevailing negative conceptions and practices.

Keywords

container, containment, exteriority, interiority, leakage, ordering, waste

We fill pre-existing forms and when we fill them we change them and are changed. (Bidart, 1997: 9)

And masses are constantly flowing or leaking from classes. (Deleuze and Guattari, 1987: 213)

Introduction

The feature film *Triangle of Sadness* (2022) by Ruben Östlund is a dark satire of the rich and the privileged. One of the film's most iconic scenes takes place aboard a luxury yacht during the captain's dinner. The sky hangs dark, and a heavy storm is rocking the boat out on the open sea. The financially overstuffed guests, full of themselves, struggle to be

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able to enjoy – or, rather, swallow and then contain – their Michelin-star dishes and maintain their posture and bourgeois charm. One female guest tries to fight nausea by pouring glasses of champagne down her throat. But nothing helps. Everyone aboard is taken over by seasickness, one by one. What was choreographed as an elegant fine dining experience escalates into a 15-minute violent symphony of bodily discharges: urgent, intense vomiting, diarrhetic eruptions, and raw sewage spewing from toilets. Chaos breaks loose on the yacht, causing distress among the people on board: the film displays staterooms flooding with brown liquid excrement and passengers sliding in vomit in bathrooms and along corridors, knocking into the walls.

The scene is ‘deliciously disgusting’, as a recent article published in the *Slate* aptly phrased it (Adams, 2022). It has the power to simultaneously disgust the spectator and make her laugh. Both the horror and the comedy of bodily discharges arguably stem from the same source, the dialectic of containment and leakage. Feminist philosopher Margrit Shildrick (1997: 16–17) has suggested that the ‘putative leakiness’ of the female body ‘breaches the boundaries of the proper’.¹ We see in Shildrick’s use of the term ‘proper’ echoes of the French word *propre*, which besides ‘proper’ and ‘characteristic of’ also means ‘one’s own’ and ‘clean’. Leakage, insofar as it cannot be controlled, is transgressive and disturbing because it violates and destabilises established normative boundaries. In this article, moving beyond events of bodily discharges as exemplified by the scene from *Triangle of Sadness*, we attend to the becoming possible of distinctions such as proper/improper, own/other, clean/dirty, interior/exterior, and order/disorder through the conditions that actualise the relation between containment and leakage.

Insofar as it marks an enclosure, containment resonates with a rich and multivalent realm of theoretical meditations. Aristotle’s (2017) *Categories* was perhaps one of the earliest efforts of documented human thinking towards the systematic delimitation and arrangement of named entities into classified containers or cognitive schemata. In contemporary thought, the obscurity of an enclosed, contained interior’s relations with its exterior has been subjected to scrutiny by philosophers, ethologists, and cultural and political theorists alike. One can indicatively mention Heidegger’s (1971) famous example of the jug as a starting point for his elaboration on the notion of the ‘thing’ through which the fourfold is gathered and united; Foucault’s (1993) analysis of disciplinary power and its spaces of enclosure; von Uexküll’s (2010) notion of *Umwelt* as the limited, and hence contained, territorial perception of an organism’s surroundings; or Esposito’s (2008) thinking of ‘immunity’, an intimately modern prerequisite for the autonomous constitution of identity coterminous with community.

Along these lines, worth mentioning are also Laclau’s (1990) and Mouffe’s (2010) adaptation of Jacques Derrida’s (Staten, 1984) ‘constitutive outside’ – ‘incommensurable with the inside, and at the same time, the condition of emergence of the latter’ (Mouffe, 2010: 12) – as central to their elaboration on antagonism and the formation of antagonistic identities; the necessity, in theorising, to perform an ‘arbitrary closure’, a positionality that starts from exclusion in order to articulate and unite (Hall, 1992); or even, through strategic essentialism (Spivak, 1996), the temporary containment of a heterogeneous group as determined by a specific identity towards achieving its goals.

Being indebted to the above broad-ranging insights regarding the provisional, and at times conventional, character of the relations that shape interiors/exteriorities and insides/outsidings, in this article we venture towards interrogating the interplay and

common ontological grounding of *containment* and *leakage* through their manifold material manifestations, beyond mental schemata, categorical reasoning, and identity formation as sketched out above. In the outline of a general *containerology* that follows, we examine containment as both a technology and an ontological condition that shapes human and more-than-human relations.² Largely disregarded as merely passive receptacles, containers nevertheless appear as crucial spatio-temporal means of ordering vis-à-vis leakage, stanching, modifying, and (re)directing flows of life.

By the terms ‘containment’ and ‘leakage’ we refer to the tempo-material processes that make container entities emerge and subsist, together with their interior and exterior milieus.³ Moreover, by containers, we do not only mean the aluminium or steel boxes loaded onto ships to transport cargo. Rather, for us, *any enclosed volumetric space* comprises a container,⁴ taking the word ‘container’ to denote an entity with a clearly defined inside and outside demarcated by relatively fixed, stable boundaries. While exploring containment technologies as spatio-temporal devices of ordering, we also stress how containment inevitably remains contextual, provisional, and leaky at best. Ultimately, by drawing from Simondon (2020) and Deleuze and Guattari (1987), we aspire to problematise the even tentative opposition and incommensurability between interior and exterior and instead address them as co-constitutive. With this, our aim is to explore and expand the *limits of the limits* between entities – with phenomenally clearly demarcated insides and outsides – that enter into relation.

We start with a brief overview of how containment and container technologies have been interrogated ontologically by other scholars, notably in the spherology of Peter Sloterdijk and in Science and Technology Studies (STS), and situate our approach in relation to them. We also argue for a dynamic conception of containers, suggesting that they need to be investigated not only as passive volumetric spaces but also in terms of their capabilities. After setting the groundwork, three sections follow that elaborate on what it is that containers do and enact. First, we explore containers qua holders by examining them as a crucial spatio-temporal technology of ordering against leakage, as they render things and materials compact, concentrated, hidden, manageable, and to be kept in place. We take our cues in particular from waste management, as we believe that waste has important theoretical lessons to offer for the thinking of containment in relation to the question of order and disorder. In the following two more conceptual and speculative sections, we shift focus to the co-constitution of containment and leakage. The first of them stresses the selective permeability of containers and discusses contained interiorities and exteriorities as processes of articulations between milieus. Subsequently, we argue for an idea of containment as a positive, expressive, and intimate territorial process that necessitates rethinking the prevailing conceptions that reduce it to acts of management and control. Finally, we conclude by discussing the key contributions of the article.

How Ubiquitous Containers and Containment Technologies Shape Our Lives

Contemporary life would probably be unthinkable were it not for an abundance of containers that enable and shape several of our daily practices (see also Otter, 2024).⁵ Containment has numerous incarnations which come in various sizes and forms: bodies, cells, wombs, tombs, buildings, cupboards, bowls, cups, buckets, cases, caskets, coffins,

bags, vessels, buses, and cruise ships – all of them are containers, whether organic or inorganic. Containerology presents thereby a call towards comprehensive accounts of the myriad of mundane technical, inhabitable, aesthetic, artefactual, and infrastructural volumetric enclosures that, in all their complexity and ubiquity, participate in making the human world.

We are certainly not the first ones to consider volumetric enclosures at the level of ontology. Perhaps the foremost thinker of the interior as an onto-epistemological principle is Peter Sloterdijk. Like nowhere else, it is in his work on ‘spheres’ that interiorities assume their primacy as spatial, anthropological, and biological metaphors. Sloterdijk (2011: 28) defines the sphere as ‘an interior, disclosed shared realm inhabited by humans’. Through a detailed exposition spanning two millennia, he provides in his *Spheres* trilogy a genealogical account of the round, spheric container as the ontological condition of human coexistence. According to Sloterdijk (2011), ‘wherever human life is found, whether nomadic or settled, inhabited orbs appear’ (p. 11). His overarching argument stretches from the most intimate life-giving container, namely the womb, to the home, the car, the peer group, the school, the village, the nation, and all the way to the world itself as a container. While drawing from Sloterdijk’s spherology, our containerology also enriches it by attending to the leaky realities of containment orbs and advocates for a more inclusive approach of interiors and exteriors as co-constitutive.

Maybe the first attempt within Science and Technology Studies (STS) into the world of container technologies is that of Sofia (2000: 186–7, 189; see also Sofoulis, 2024), who, following Lewis Mumford’s treatises on technics, has classified container technologies into three different kinds according to their scale and complexity: *utensils* are generic containers such as baskets and pots; *apparatuses* are specialised containers, such as smelting furnaces, invented after the advent of the industrial era and designed to do something to the contents via connections to ‘larger’ technologies; and, lastly, *utilities* amount to technologies and infrastructures such as pipe networks and buildings that enable things to run smoothly.

Diverging from Mumford’s (1967) and Sofia’s (2000) somewhat reifying focus on container objects, more recent STS scholarship has approached containment as ‘a performative sociotechnical system that generates and sustains new realities, new systems, and new relationships’ (Schoot and Mather, 2022: 937; see also Kenner et al., 2019; Angerer et al., 2024). For example, in their analysis of certain social scientific techniques that were employed during the first half of the 20th century, Lezaun et al. (2013: 280) have proposed the notion of ‘provocative containment’ as a method of investigating and intervening in social reality. The authors examine how staged experiments that involved manipulating the interaction conditions of a small group of participants in a confined space generated novel realities which were artificial and yet demonstrated real social problems ‘out there’. Expanding on the concept of provocative containment, Hawkins and Paxton (2019) demonstrated the capacities of a wild-life conservation fence as a techno-material enclosure to intervene into, modulate, and reorder ‘flows of life’, actualise new forms of nature, and enable social regulation. Containment is viewed by the authors ‘as a technique that simultaneously holds and also rearticulates’; it ‘provokes something new’ (Hawkins and Paxton, 2019: 1015, 1016).

Moving from containment as a performative process to its more humble material expression, what is peculiar and proper to the container in its capacity of being a container is *holding* something together (see also Schoot and Mather, 2022). Containers collect, gather, and keep in place what would otherwise fluctuate and flee endlessly. This aspect is already revealed by the etymology of the term. The verb ‘contain’ comes from the Old French word *contein*, which stems from Latin *continere*, ‘to hold together’, ‘enclose’, where *con* means ‘with’, ‘together’, and *tenere* ‘to hold’. By enclosing and holding together, containers preserve against dispersal, prevent spillage, and suspend flows. So, an interior and an exterior need to be created by means of clear-cut boundaries. Holding requires an enclosed interior space as that which holds and prevents leakage.

Due to their ability to hold, containers may be used not only to keep the contents in one place, but also become transporting devices through the compounded delegation of increased qualities of aggregation and movement (speed), ranging from the elementary mobile basket to machines on wheels or with wings. Thereby, containers differ in their mobility: while some (e.g. cars) are mobile, others (e.g. tombs) are immobile. Further, while people can carry and transport their belongings in containers of smaller-than-human scale (e.g. bags and suitcases), larger-than-human containers (e.g. ships, aeroplanes) are self-propelled and transport people inside them.

While holding may indeed be the main function of containers, there is nevertheless more to them than just that. Besides keeping and retaining things, containers may also be employed to *discharge* what they hold. If containers did not entail the possibility of opening, nothing could ever be poured in for containment or released for use. While holding for the sole purpose of discharging is not applicable to all, the system of closing and opening is crucial to each and every container. Even, say, nuclear waste repositories, which are clearly meant to prevent their long-lasting contents from leaking by relying on the material durability and slow time of sealed containers, retain their meaning from the possibility – possible threat – of leakage (see van Wyck, 2005). And even the humblest of containers rely on a selective process of threshold creation: while some entities are allowed to enter or exit from them (there is a clearly demarcated opening assigned for that purpose; things and materials may not enter or exit anywhere at will), others are blocked from entering or exiting.⁶

Containers are crucial for our everyday subsistence in cultural and practical terms. In *The Myth of the Machine: Technics and Human Development* (1967: 140), Lewis Mumford suggests that such tasks as ‘[c]ooking, milking, dyeing, tanning, brewing, gardening’, all of which have to do with ‘the vital processes of fertilization, growth, and decay, or the life-arresting processes of sterilization and preservation’, involve containers of various sorts: besides the womb as the primal container of life, humans rely on containers like pots, bins, baskets, and vats in their mundane activities. Without them, the practices of preserving, storing, holding in place, protecting, accumulating, and supplying would be utterly ‘inconceivable’, Mumford (1967) suggests.

The above brief foray into the world of containers makes evident their omnipresence as entities entangled with humans. Containers, commonly viewed as passive objects (Mumford, 1967; Sofia, 2000), have been largely overlooked in the history and philosophy of technology and sociological accounts of everyday life.⁷ However, the perception

of containers as humble and unobtrusive receptacles is misrepresentative of them. The distinction Mumford (1967) made between assumedly dynamic tools and machines, on the one hand, and static containers, on the other hand, cannot be sustained. Containers do have effects that go beyond the mere separation between an inside and an outside. While it would seem that a jar can simply sit there, full, on the shelf, to work in its capacity, containing something is more than a static state of things, a form of passivity; it is active and has an ongoing historicity. Already the jar's mere standing in place and holding things together is every second a dynamic process. The container is also a 'reality-generating device' with complex effects; it is an 'intervention into the dynamics of life' (Hawkins and Paxton, 2019: 1009). Containers *do something* not only to their contents but also to space and time; they shape, mould, and dam flows of life; they organise human and nonhuman relations; and they may accelerate, slow down, or even stop time. To take just one example of the enactment of temporalities, by maintaining the inside temperature below the freezing point of water, the freezer works as a kind of time capsule that prevents or at least slows down decay and decomposition; the frozen contents are placed, as it were, outside the flow of time.

What is more, while containers, in their ability to suspend fluctuation, may provide provisional homeostasis – a certain level of stability – they themselves always remain open to change and destabilisation and are subject to duration and decay. Containment is thereby always a function or fold of time-space. It is perhaps the idealised Western preoccupation with containment as an enunciation of fixity that has rendered container entities into facets of space and territorialisation alone, in relation to perpetual attempts at establishing a semblance of order within against disorderly, leaky outsides. We explore such attempts at spatio-temporal ordering in more detail in the next section by using the containment of waste as our example.

Ordering and Leakage

Containers appear as a crucial spatio-temporal technology to establish order. Edensor (2005: 311) argues that '[s]ocial order is partly maintained by the predictable and regular distribution of objects in space'. To this we would add that it is often thanks to containers of various sorts that this distribution is possible, since containers retain things in the place assigned to them, preventing them from spreading out in space uncontrollably. Edensor (2005: 312), too, briefly mentions 'strategies of "containment"', with the help of which the 'wildness of things' (Attfield, 2000) can be tamed through recontextualising and incorporating them within 'prevailing arrangements', but he does not examine containment or containers at length and in detail, as we do here.⁸

By establishing and sustaining order, containers eliminate the danger of pollution or contamination caused by the coming into contact of two things that belong to different categories. Interestingly, already in the Aristotelian tradition, as we noted above, categories themselves were typically understood through the cognitive schema or spatial metaphor of the container. The idea of the container as the principal model of categories is also expressed by STS scholars Bowker and Star's (1999: 10) famous idea of the 'classification system' as a 'set of boxes (metaphorical or literal)'. Further, Jones (2009: 179) suggests that even 'when we are trying to think of the boundaries between categories as

open and porous – which, intellectually, we know they are – we tend cognitively to understand categories as closed and bounded containers’. The ordered reality created by categories and containers is a direct consequence of their ‘ability to establish boundaries between what is on the inside and the outside’ (Jones, 2009: 177). In the most elementary sense, containers are architectural gestures and spatio-temporal technologies constructing enclosed interiors amidst the endless continuity and infinity of space. Containers as ordering devices are dependent on clear boundary demarcation (see, e.g., van Houtum and Naerssen, 2002), which marks a division between an interior and an exterior and is thus a prerequisite for containers to be able to hold things within them.

A telling – perhaps even the primary – example of the threat of contamination and how containment and categorising go hand-in-hand is provided by *waste*. We draw our observations loosely from our ongoing empirical work conducted in Finland on nature-cultural entanglements with waste across various sites, such as households, incineration plants, waste management companies, and recycling centres. While the observations come with certain limitations, as they may not apply to other contexts with quite different waste management systems, we nevertheless believe that the example has theoretical lessons to offer for the thinking of containment and leakage. At the same time, and even though our more extensive fascination with containment originates in our thinking with waste (see Lehtokunnas and Pyyhtinen, 2023; Pyyhtinen and Lehtonen, 2021) and is to some extent even shaped and motivated by it, the insights developed here are intended to apply to the interplay and conditioning between containment and leakage in general, as will be demonstrated in the following sections.

A key early work with regard to the theme of defilement and ordering is *Purity and Danger* (2002 [1966]) by Mary Douglas. Its famous formulation of dirt as ‘matter out of place’ (p. 44) has been widely applied in waste studies. It is typical of waste scholars to stress that ‘whatever leaks [. . .] seems to transform into waste’ (Olofsson, 2021: 3). What has received less attention in waste scholarship, however, is her formulation, presented later in the book, that rubbish also ‘clearly belongs in a defined place’ (Douglas, 2002 [1966]: 198; see also Liboiron, 2019). So, waste does not merely represent that which does not fit in a particular order; the container is a telling example of how there is also a normatively designated place *for* waste. For example, the bins used to store waste at home confine discarded things to their assigned place, and thereby prevent waste materials not only from mixing, spilling, flowing, and expanding uncontrollably in the space of the home, but also from disturbing the conceptual order of things.

Waste containers further establish and maintain order through a more fine-grained compartmentalisation into particular kinds of waste. Containers perform the work of segmenting through a process of exclusionary inclusion. On household visits, the first author of this paper observed during fieldwork how containers played an important role in making waste manageable. The buckets and bags inside the kitchen cupboard, as much as the waste bins outside the participants’ homes, accomplished a sort of purification of space by dividing and distributing waste into discrete categories. These categories adhere to the classification system governing household waste management practices in the Helsinki metropolitan area in Finland: biowaste, paper, carton, glass, metal, plastic, and mixed waste (i.e. waste destined to be incinerated due to being classified as unrecyclable and untreatable) should be kept separately. One informant, a mother of two, mentioned

she frequently digs through the contents of the buckets to sort things correctly because other family members have the bad habit of misplacing items in the wrong bin. The above example of material(ised) containers such as buckets, bins, and bags being designated for each type of waste content within a specific classification system illustrates how categories are made to be viewed as mutually exclusive for the sake of operationalisation and manageability (see also Woolgar and Neyland, 2013: 66–78). ‘In an ideal world’, as Bowker and Star (1999: 10) conveniently suggest as if speaking of waste, ‘categories are clearly demarcated bins, into which any object addressed by the system will neatly and uniquely fit’.

At the same time, by retaining the waste that is placed within it, the waste container is not only responsible for making the unruly, dirty, threatening, and unwelcomed waste manageable through receiving and keeping it in place, but it also participates in symbolically enacting and enforcing those very same qualities of waste which it is supposed to neutralise. While the act of binning entails the placing of the discarded thing outside of a category (e.g. edible food), it simultaneously places it within another one (i.e. waste). The container transforms its contents by bringing certain qualities into being (e.g. wasteness and dirtiness) while suppressing others (e.g. sellability and edibility). And there does not even have to occur any change in the biochemical properties of an item on its way from the shelf of a grocery store to the waste container for its ontological status to be transformed from food to unsellable and inedible waste (see also Evans, 2014: 67; Lehtokunnas and Pyyhtinen, 2022; Lehtonen and Pyyhtinen, 2020); its placing in the bin suffices to do that.

While containers enact and sustain order, all containment is, however, bound to remain precarious, provisional, incomplete, and leaky.⁹ Leakage as a function of territory and temporality is the occasion when the established order is disrupted. Whether sketched as ‘incontinence’ (Sofia, 2000), conceptualised as ‘seepage’ (Cons, 2020) and ‘minor escapes’ (Zavos, 2021), or scrutinised through the lens of overflow (Burch, 2019; Callon, 1998), containment seems to find its opposite in leakage. Several recent contributions within the field of waste studies as well have addressed the intimate link between waste (as disorder) and leakage (see e.g. Gabrys, 2009; Hird, 2012, 2013; Lehtokunnas and Pyyhtinen, 2023; Millar, 2018; Moore, 2012; Olofsson, 2021; Pyyhtinen and Lehtonen, 2021; Salonen, 2022; van Wyck, 2005). Importantly, Hird (2012: 458) also makes a reference to the tentative stability of containers when writing that ‘[t]he problem with landfills is that their containment [of waste] is always temporal; eventually they spill and leak’. In another context – that of border studies – Nail (2016) suggests that ‘[a]ll borders leak precisely because all borders are constituted by and through a process of leakage, which is only temporarily stabilized into border regimes’ (p. 13). The material fluidity of containment technologies means that because leakages can be contained only temporarily, containment is ultimately bound to fail. Containment amounts to ‘failure governance’ (Selg et al., 2022): in it, failure is not an essential step on the path to success, but the most likely result.

Whilst admitting that containers and their boundaries are only temporary formations, it is equally important to address flows and fluidity in relation to containment by attending to moments when some kind of stability can be observed. As much as containers and their boundaries are porous and fluid, flows are also dependent on, redirected, modified,

and ordered by containers of various sorts. In other words, containment and leakage mutually presuppose each other. While the governing and control of leakiness is what containment to a great extent is for, containment is the condition for the possibility of leakage and vice versa. Without containers, no leakage could occur in the first place, whether one refers to leakage as a flow from the container's interior to the world outside or from the container's exterior to the relatively enclosed world inside it. The study of containment thus needs to take into account the processes and events happening both inside and outside the territory demarcated by a container.

Milieu of In/Exteriority

No matter how complex the relation between a container's interior and exterior might be, when it comes to thinking of and practising containment, the approximation usually tends towards a purifying act aiming at the maximum control of leakage (national borders, prisons, dams, and nuclear depositories are prominent examples). Sometimes the objective is even to ultimately annihilate leakage. Schoot and Mather (2022: 951) provide a rather telling example in this sense: escapes (leakage) of farmed salmon (interior) into the ocean (exterior) are officially tolerated in the Newfoundland and Labrador province, but at the same time successive policy amendments have a stable and clearly defined objective of 'zero escapes'.

By suggesting that containment and leakage should be approached as reciprocally presupposed, we wish to depart from this line of thinking, where containment becomes mainly a teleological principle for the control of leakage. Drawing especially from a repertoire of biological and cellular containers, in this section we challenge the antinomy of inside/outside and explore its limits. Instead of considering containers as entities with strictly regulated interiors, we point towards an idea of containment as a process of *articulations* between interiorities and exteriorities. For instance, the house as a dwelling container not only creates proprietary boundaries, keeps wind, rainwater, snow, and cold outside, and provides a shelter from pests, wildlife, and other potential invaders, but also enables, conditions, informs, and differentiates the relations between all entities, human and more-than-human, on both sides of its boundaries.

The rigid binary opposition of inside/outside is unsettled when the boundaries of containers are conceived as simultaneously and interchangeably *membranic* and *layered*. They are membranic in the sense that interior and exterior cannot be regarded as absolute qualities. At the same time, this consideration obliges us to become attentive to the layered nature of containers; a container contains and is always contained ad infinitum. What we mean by the idea of the boundaries of containers as membranic and layered can be clarified in a helpful manner by drawing from the philosophy of Simondon (2020). As Simondon (2020) explains, what characterises the outer part of any cell (which is a container entity) of a living organism is a separation of 'a region of interiority from a region of exteriority' (p. 251).

Importantly, these two regions are not disconnected from each other, but they become distinct precisely through the formation of selective passages: some entities are allowed to enter or exit from the cell, while some others are blocked from entering or exiting, owing to the membrane. Through this process of selective permeability, the membrane is

therefore what guarantees the continuation of life and ‘maintains the milieu of interiority as a milieu of interiority relative to the milieu of exteriority’ (Simondon, 2020). As a result, a container’s interior and exterior require a complex consideration that defies rigid demarcations, incompatibilities, and control as a constant. Their relation is constituted by multidirectional passages, processes of selection, and myriad entities that enter and exit from the cellular territory.

Thinking about containment, boundaries, and interiority/exteriority becomes further complicated when we acknowledge that the latter afford several, variable stages. Simondon offers two illuminating examples:

an endocrine gland empties the products of its activity into the bloodstream or some other organic liquid: the typical organism’s interior milieu is in fact a milieu of exteriority relative to this gland [. . .] the interior of the intestines is in fact exterior to the organism, [. . .] an annexed exteriority. (Simondon, 2020: 251)

It is in this sense that we propose an extension of Simondon’s insights as approximations applicable to containers and processes of containment beyond living organisms. To go back to the example of the dwelling container mentioned above, instances of the membranous nature of its boundaries become articulated by the selection of variable in/outcoming entities mediated by openings (e.g. doors and windows); its bidirectional layeredness prompts us to think from the building block to the neighbourhood, the city, and all the way to the earth and beyond, on the one hand, and from the room, to the human body, to the cupboard . . . to the infinitesimal entities within a seed temporarily inhabiting a waste bin, on the other. Undoubtedly, these various containers are not of the same type and scale; they belong to rather disparate classification systems that are rarely taken together. This is, however, how thinking with containment as an ontological principle, and away from rigid classifications, allows one to witness the events and arrangements where permeability and layeredness are manifested and to attest to the relations traversing and exceeding categorical boundaries. Given the existence of selective passages and the relativity of interior and exterior milieus, a container entity thus cannot be considered merely through its capacities to hold, demarcate, and confine. Such capacities overemphasise its autonomy and obscure its relationality. What dwells in it, and outside of it, including ‘other’ containers and ‘other’ processes of containment, matter as much as its supposedly ‘own’ attributes.

When Deleuze (1988) offered his ethological interpretation of Spinoza’s affect, he stated that ‘an animal, *a thing*, is never separable from its relations with the world. The interior is only a selected exterior, and the exterior, a projected interior’ (p. 125, emphasis added). This view allows us to complicate the aforementioned idea of boundaries as entities that leak: boundaries in themselves are not a sufficient condition for containment and leakage to happen. The fact that both processes cannot be thought of, or actualised, without boundaries does not mean that boundaries in themselves leak; it is rather that both leakage and containment *happen through boundaries*. In other words, there is always a relation between a ‘selected exterior’ (a milieu of interiority) and a ‘projected interior’ (a milieu of exteriority) that becomes manifested through the *mediation* of boundaries. Interior and exterior, containment and leakage, cannot be thought of as opposites, in the

form of an antinomy, but they comprise differential intensive attributes of a milieu. The notion of milieu, both of interiority and exteriority, becomes significant when containers are scrutinised as entities, as ‘individuals’ (in the broadest sense of the term) with perpetually annexed, discarded, and interiorised attributes in constant flux.

When it comes to individuals, both physical (including technological) and biological, Elizabeth Grosz (2012) sums up the above point when discussing Simondon’s principle of individuation. She suggests that ‘[t]he individual is always more than itself, for it is an individual with the ongoing potential to undergo further changes after it is constituted as such’ (Grosz, 2012: 38). The container, understood through this lens, carries the potential for perpetual change. This line of thinking has immense implications for how containment is approached, as it shifts focus from a process of exclusionary inclusion with the controlling of leakage (or flows) as its sole objective to processes of *articulations* with limits that cannot be known in advance.

Conceptualising containment in this way upends the dichotomy between change and stasis. The notion of metastability is crucial in this respect: it only takes the slightest modification of an entity’s attributes to break the balance (Combes, 2013). It is through milieu attributes where ‘a distinction, or a permeable difference, between an interiority and an exteriority, a distinction or border between two sites unfolded from one’ (Grosz, 2017: 178) becomes articulated and manifested. Again and again, the container enters phases of (re)definition by the attributes that dwell inside and outside of it and constantly reconfigure it in conjunction with the relative and permeable limits of its apparent form.

Territory, Expression and Intimacy

It has perhaps become evident by now that thinking about containment in this mode renders it a territorial issue. We do not, however, understand territory in the sense that, for example, the field of border studies does, through the primacy of power relations translated into regimes of control (Jones, 2009). Instead, we aspire to advance a more situated approach by following how Deleuze and Guattari (1987) took up Simondon’s insights and applied them in their geophilosophy. Their 11th plateau of *A Thousand Plateaus* (1987) opens with a fable of three intermingled steps constituting one and the same thing, the ‘refrain’ (Fr. *ritournelle*): first, the tentative demarcation of a centre, a return from chaos; second, the organisation of an interior ‘space’ through a ‘circle’ around this centre: a home, a bounded/contained entity; and third, the opening up of a crack in the boundaries of the circle, allowing their traversal and the reciprocity between interior and exterior.

The role of the refrain is distinguished from the outset as territorial; it is ‘a territorial assemblage’ (Deleuze and Guattari, 1987: 312). What makes it as such are its rhythmic qualities resulting from an amalgamation of *both* constant boundary-making *and* boundary-breaking between milieus: the refrain is a rhythmic process of concomitant return to – and escape from – the abode; of perpetual containment and leakage. Rhythmic aspects of territorial gestures that assemble ‘[f]orces of chaos, terrestrial forces, cosmic forces’ are emphasised over metered ones related to cadence that have aggressiveness (or its concealed twin that is control) as their basis (Deleuze and Guattari, 1987). A territory is

a product of a process by which milieus and rhythms become *expressive*. The territorial mark, Deleuze and Guattari (1987) argue, is a primarily expressive signature, a style, a mannerism with spatial and temporal qualities that are always conditioned by the milieu entities entering and exiting the territory (the enclosure, the container).

It is important to stress that these entities, including the territory and the territorial mark, need not be living – or even organic. Territorial and containment matters of expression should not be equated with their human enunciations; they are much broader. A decomposing body, a container in its unmaking, becomes expressive (leaves a territorial mark) of both life and death through the myriad associations unfolding between body, soil, and the border-traversing labour of microorganisms. Similarly, a rock – a high-density container – marks and remarks expressively a territory through deep time selective processes of grain aggregation, inward/outward oozing of water particles, and sedimentation.

We thus wish to call for the interrogation of containment under a renewed lens of territory with immanent expressive attributes. Besides being considered in the negative as multi-scalar technological, immunological/geopolitical, and exclusionary devices of aggressiveness/control that nevertheless contribute to the creation of new lifeworlds, containers deserve to be scrutinised in a positive manner. Containers are, equally and importantly, entities that cannot be isolated from the expressive alliances and entanglements between them created by the myriad entities traversing their milieus of interiority and exteriority. This analytical move necessarily entails attending simultaneously to more-than-humans, more-than-boundaries, more-than-exteriorities and more-than-interiors, and frees the logic of containment from its normative grounding.

Before closing this section, we briefly return to Sloterdijk. We agree with Wambacq and van Tuinen (2017) that his work challenges considerations of absolute interiorism and add that it launches a thorough critique of containment's defensive, immunological, and exclusionary attributes. This programme becomes perhaps most apparent in the first volume of the *Spheres* trilogy, *Bubbles* (2011), where a bubbly intimacy is at the forefront. Echoing Simondon, Sloterdijk writes:

As a system of hybrid communicating vessels, the human interior consists of paradoxical or autogenous hollow bodies that are at once tight and leaky, that must alternate between the roles of container and content, and which simultaneously have properties of inner and outer walls. Intimacy is the realm of surreal autogenous containers. (Sloterdijk, 2011: 88)

This realm of 'surreal autogenous containers' is the one through which Sloterdijk's (2011: 89) microspherology develops a theory of the *intimate* through 'a history that has never been told, and whose heroes are *eo ipso* not humans themselves, but rather the topoi and spheres as whose function humans flourish, and from which they fall if their unfolding fails'. These topoi and spheres – or containers – intermingle, overlap, and span from the womb to the body and to anything humans allow to contain them. Microspherology is not an inquiry into the smallest of spheres but a quest towards the secrets of intimacy regardless of size. Conceived as such, intimacy crushes 'the dream of human autonomy' (Sloterdijk, 2011: 94); it informs a theory of the 'weak' despite the intellectual machisms relegating it to the much-maligned domain of 'too much sweetness' (Sloterdijk,

2011: 90). Intimacy becomes allied with solidarity, affect, and sympoiesis, and provides an alternative to prevailing conceptions and modes of containment by proposing a shift from a technopolitics of exclusion to arts of inclusion through the intimate encounters it can offer.

Conclusion

In this article, we sketched the outlines of an ontology of containment and leakage – what we call *containerology*. We examined containers qua holders especially as spatio-temporal technologies and devices of ordering, through their capacities to simultaneously hold together in place (included) and out of place (excluded). Much like categories – which in themselves tend to be modelled in accordance with the cognitive schema or spatial metaphor of the container – containers afford exclusionary inclusions. Their ontological predicament lies in the demarcation of an interior and an exterior. As we discussed through the example of waste management, and spanning from the humble waste bin to the technologically advanced nuclear waste repository, the dominant modus operandi regarding containment is one of accelerating rigid segmentation, purification, and immunisation.

We also highlighted how such volumetric enclosures are vital to numerous material and normative human practices and processes. Containers of various sorts are integral to everyday life and what it is to be human. Sloterdijk (2011: 90) maintains that ‘it was never possible to speak of humans without having to deal with the various aimlessly wandering poetics of the inhabited interior’. However, containers do not only play a part in how humans dwell. They are essential to life itself, starting from the organism which acts as a container for life. Amid the becomings of a fluid reality, containers appear as things which seem to stanch endless flow. For example, the hard borders between humans and waste are there for a reason; admittedly, it is quite difficult to imagine anyone living unguarded from decaying radionuclides or decomposing animal remains.

And yet, we also argued that the stability of containment is only temporary; the capacity of containers to hold remains provisional at best. The leakiness of containment ultimately makes it ontologically paradoxical: while suspending fluctuation, containers themselves always remain in a state of flux – they are never entirely fixed. The process of life – or what Deleuze (2001) called *a life* – can never be contained for good, but it overflows individual organisms, breaks through boundaries, and bursts open any fixed forms: ‘it is a condition of life that everything leaks, and nothing is locked in’, as Ingold (2021: 7) argues. Containers are tentative holding and gathering entities with permeable boundaries, entities whose content unavoidably leaks outwards as much as the contents of their exterior leak inwards.

Examining containment requires, therefore, an equal degree of attentiveness to leakage as well, since leakage and containment are reciprocally presupposed. Instead of excluding one another, they are part of the same process that enacts perpetual orderings, disorderings, and reorderings through their interplay. With our example of waste containment examined above, we wanted to propose that the leaky reality of waste, the mirror or Other of the supposedly ordered world of humans, is an apposite place to embark on such a quest. But we set out to undermine the opposition between containment and leakage even further by interrogating their relation through the affiliated notions of interiority

and exteriority. By so doing, our goal was to rethink containment beyond existing approaches, such as the technopolitics of control (Nail, 2016), the immunologies of interiors (Sloterdijk, 2016), the sociotechnics of holding together (Schoot and Mather, 2022), and leakiness as a deliberately designed feature of containment (Angerer et al., 2024). When one acknowledges the co-constitution and topological nature of the interior and exterior, boundaries become potent mediators, allowing for selective permeability. Instead of amounting to merely rigid and impermeable lines of demarcation, the boundaries of both physical and biological container entities are membranous and layered. We therefore insisted on milieus of interiority and exteriority being indispensable for the conceptualisation and problematisation of any container, as they participate in variable interplays of multidirectional boundary transgressions. It was in this sense that we argued for the phased inseparability of containers and attributes of their associated milieus as metastable articulations, as territorial manifestations. Containers cannot be considered as clear-cut, isolated entities separated from their milieu and its temporal flows.

While containment has been predominantly conceived in negative terms, the emphasis on metastability and territoriality affords a more positive approach. Besides referring to exclusion, confinement, and restraint, containment also needs to be understood as an *art of inclusion*, through the intimate and affective encounters it may offer. Whenever two containers – be they living or non-living – meet, the precondition for their meeting is precisely the fact that they are bounded. However, an encounter does not designate only a threat of pollution against which containment would protect, but it can also be a living entanglement of productive alliance; a subtle, differential transformation or a becoming-with (see also Tsing, 2015). For us, this has the potential to render containment an inclusive, intimate, and expressive process, whereby interiorities and exteriorities are approached as having a provisional character instead of a permanent, fixed, and oppositional one. As both milieu entities and entities *of a milieu*, containers possess expressive and intimate territorialising blocks of space-time that cannot be captured through the negative terms of exclusion, confinement, and control alone.

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Notes

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1. Grosz (1994: 204), too, has referred to the existence of a ‘common coding of the female body as a body that leaks’.
2. A recently published edited volume by Angerer, Richardson, Schmedes and Sofoulis (2024) resonates thematically with our work and our call towards more research on containment and leakage.
3. In this article, we adopt the notion of milieu throughout as employed by Deleuze and Guattari (1987). In his translator’s foreword to *A Thousand Plateaus*, Massumi (1987: xvii) notes that ‘[i]n French, milieu means “surroundings”, “medium” (as in chemistry), and “middle”’. And he continues by suggesting that in the work of Deleuze and Guattari, ‘milieu’ needs to be understood ‘as a technical term combining all three meanings’. (See also Sprenger (2023) for a comprehensive account of the epistemologies that have historically shaped the distinct but related concepts of environment, milieu, and Umwelt.) We use the Deleuzo-Guattarian concept to remain consistent with not only the relationality between interior and exterior that we advance regarding containment and leakage, but also to upend the relative dichotomy between an entity (both human and more-than-human) and its surroundings. As Zourabichvili (2012: 95) notes about the notion of milieu, ‘sometimes we act in it, sometimes we are it’.
4. Thereby, we do not see the container only as a ‘standardized transport unit’ (Klose, 2015: 176) that shaped the world economy as we know it (Levinson, 2006), but in much broader terms.
5. While our examples are from Western cultures, containers are of course not a peculiarity of the West – which is a leaky container in itself – alone. There is probably no known culture that would be unfamiliar with containers (for anthropological works of the role of containers in indigenous societies, see for example Warnier [1993] and Forni [2007]). However, the West – and western thinking, insofar as it is inextricably linked to the colonising spread of modernity and development – has played an instrumental role in taking processes of containment, especially as a technology of purification (Latour, 1993), segmentation (Deleuze and Guattari, 1987), and immunisation (Esposito, 2008; Sloterdijk, 2016), to their extremes.
6. Angerer et al. (2024) address this with the metaphor of ‘filtering’. We will examine selectiveness as an aspect of containment in more detail in the section ‘Milieu of In/Exteriority’.
7. While anthropological accounts, too, traditionally relegate containers to the background and focus on contents instead (Shryock and Smail, 2018), occasionally containers do prefigure in the discipline as entities with multiple indigenous meanings and functions (see, e.g., Descola, 2013: 324; Lévi-Strauss, 1961: 268; Mauss, 2002: 56; Warnier, 1993).
8. Existing sociological accounts of containment also link containment with the question of order (e.g. Hancock and Garner, 2011), yet they tend to delimit the focus on humans alone and leave aside containers themselves in their materiality and effects.
9. See also Otter (2024: 71), who suggests that, because containment is never complete and total, ‘uncontainment becomes the final and most problematic aspect of our contained world’. Categories, too, are inchoate and subject to change: for example, in Finland, due to the

restriction of landfilling of biodegradable waste introduced in 2016, mixed municipal waste came to be seen as an important resource for the rapidly developing waste-to-energy field and therefore as a terrible thing to waste. As the waste that was previously landfilled was now incinerated, a new category of waste was created: burnable waste.

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