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# On the quadrants of the thing-world relations: a critical revision of Hartmut Rosa's resonance theory in terms of thing-world

Tsuo-Yu Cheng<sup>1\*</sup>

\*Correspondence:  
cehepar@nju.edu.cn

<sup>1</sup> School of Social Sciences,  
Nanjing University, 163 Xianlin  
Road, Qixia District, Nanjing,  
Jiangsu Province, China

## Abstract

The most valuable contribution of Hartmut Rosa's social theory is the extension of the scope of Critical Theory from the individual world and the social world to the thing-world. However, Rosa's analysis of the thing-world is somewhat insufficient. The present article provides an attempt to apply new materialism to the thing-world to compensate for the missing elements of Rosa's resonance theory. An examination and integration of two of the most representative theories of new materialism, namely agential realism and object-oriented ontology, yield four types (or quadrants) of thing-world relations based on intra-action or inter-action and on inclusion or exclusion: namely resonance, alienation, appropriation, and catastrophe. This quadrant can provide a clearer criterion for resonance in Rosa's Critical Theory, and manifest that the problem in contemporary society we have to concern might exclusion instead of alienation.

**Keywords:** Critical Theory, Hartmut Rosa, New materialism, Resonance theory

## Introduction

Few modern social theories are as robust as Critical Theory from Frankfurt, which after nearly a century of development, is still relevant today. Since 1937, when Max Horkheimer proposed the notion of Critical Theory in his essay *Traditional and Critical Theory*, numerous scholars have had, according to Hartmut Rosa, a common concern to analyze the social condition, diagnose its symptoms, and propose emancipatory solutions, thus continuing to develop Critical Theory (Horkheimer 1972; Rosa 2019a). Compared with the development of other theories, such as system theory, (post)structuralism, and the previous Birmingham School of cultural studies, the most distinctive feature of the development of Critical Theory is that it has a clear generational succession. Each generation critiques and attempts to solve the problems of the previous generation's theories, in addition to proposing new directions appropriate to the generation's era.

Jürgen Habermas and Axel Honneth were key figures in the development led the development of the second and third generations of Critical Theory, respectively. Following in the footsteps of Honneth, many scholars of the new generation currently work

toward the advancement of Critical Theory, with Rosa being a representative figure. He has proposed a new version of critical theory through his resonance theory. One of the features of this theory is that it expands the scope of Critical Theory to include whole-world relations (Rosa 2019b). Through Rosa's extension of Critical Theory, the study of Critical Theory is no longer limited to individuals and the social aspect but can include more aspects. In a sense, Rosa introduces a substantial world-relational turn to Critical Theory that warrants a deeper understanding and exploration.

Rosa's version of Critical Theory is extensive, elaborate, and often quite elegant and romantic. His resonance theory may even signify the birth of the fourth generation of Critical Theory (Cheng and Zhang 2021). However, the extension of the scope of Critical Theory to whole-world relations is bound to introduce a new challenge that Critical Theory has not yet encountered; whether Rosa has completely overcome this challenge merits examination. For example, Habermas and Honneth, in their discussion of the social world, emphasize the reciprocity among subjects and thus regard *Verständigung* and mutual recognition as the central goals of Critical Theory. Rosa's resonance theory also suggests the fundamental importance of reciprocity, but he regards reciprocity not only as a criterion for diagnosing self-relations and social relations but also as a criterion for diagnosing the human-thing-world relationship. This may represent a major breakthrough in Rosa's advancement of Critical Theory, and Rosa himself also underscores his contribution (Rosa 2017: 160). However, examining the aspect of Rosa's resonance theory addressing the thing-world reveals that his discussion in this area is somewhat deficient; consequently, his critical analysis of the human-thing-world relationship is less than fully convincing and occasionally even contradictory.

The preceding discussion does not suggest the absence of a resonant relation between humans and the thing-world; instead, it suggests that the analysis of this relation requires some argumentation that has been absent in Rosa's work. Accordingly, in this paper, we focus on this discussion (or argumentation). In the first section, we provide an overview of Rosa's extension of the scope of Critical Theory to the thing-world through his resonance theory and the sociology of world relations, and we highlight what seems to be missing in this extension. In the second section, we introduce neomaterialist theories, namely agential realism and object-oriented ontology (OOO), to underscore the rich multiplicity of relations between humans and nonhuman objects. In the third section, we provide a preliminary classification of these relations. Among them, the relation between humans and nonhuman objects can be resonant, according to Rosa's definition (i.e., an intra-actional, mutually constitutive relationship); however, other types of thing-world relations also exist, including the alienated relation that Rosa critiques. In the fourth section, we address these other types of thing-world relations. Nevertheless, when we introduce new materialisms to examine the relationship between human beings and the thing-world, we note that apart from the missing links in Rosa's theory that can be addressed, "alienation" is a rather ambiguous concept; thus, an alienation-based critique of contemporary world relations (or at least the human-thing-world relationship) may be inaccurate. The real problem might not be alienation but rather exclusion. Hence, in the final section of this paper, we propose a preliminary "critique of exclusion" based on the clarification of the part of Rosa's resonance theory that addresses the human-thing-world relationship.

## **The missing link in the resonance theory**

### **An overview of Hartmut Rosa's resonance theory**

Rosa's resonance theory successfully broadens the scope of Critical Theory because he adopts a different point of departure than his predecessors, or even his peers.

The aim of the first generation of Critical Theory, represented by Theodor W. Adorno and Horkheimer, is to subvert instrumental reason and resist dominant power by means of thought toward the nonidentical (e.g., Adorno 1990). To a certain extent, the first generation considers the experience of the individual to promote new possibilities of life in society through the denial power of individuals (cf. Jaeggi 2005). Habermas, the key figure of the second generation, emphasizes interaction and communicative rationality, thus extending the focus of Critical Theory from the individual to intersubjectivity as well as social relations (e.g., Habermas 1981). Although the third generation (represented by the work of Honneth) shifts the topic of discussion from communication to recognition, the scope of Honneth's research does not differ substantially from that of Habermas' (e.g., Honneth 1996). Both Adorno, Habermas, and Honneth have devoted considerable attention to the formation of subjectivity. For if one of the central goals of the social sciences and humanities is the pursuit of a good life, then the constitutive condition of subjectivity is indeed a prerequisite for a good life (cf. Saar 2019).

The question of subjectivity remains significant for the new generation of Critical Theorists. However, Rosa's theory of subjectivity does not ensue from idealist philosophy, intersubjective philosophy, or practice theory, as is the case with the aforementioned scholars. Instead, it ensues from Plessnerian and Merleau-Pontyan theory of being-in-the-world.

Helmuth Plessner is known for philosophical anthropology, and Plessner's discussions involve comparing humans with other living things, especially plants and nonhuman animals. Plessner argues that plants can only be left somewhere to grow in place. A non-human animal is not as deeply integrated into its environment as a plant is, but it moves around and responds to its environment. Nevertheless, an animal merely responds to its environment with its intrinsically prescribed pattern of life. By contrast, humans have a specific mode of survival: they first integrate into an environment—as plants do—to understand the nature of the world, and then they use this knowledge to establish their own way of being-in-the-world and respond to it as animals do. Plessner uses the term "eccentric positionality" to describe the unique ability of humans to establish the self's positionality from an objective perspective separate from the self (Plessner 2019). Maurice Merleau-Ponty, on the other hand, first analyzes the conditions under which human perceptions are formed and then explores the constitution of the human subject, arguing that for perceptions to be formed, the perceiving human being and the perceived world must coexist because our perceptions are invariably constituted by everything that touches the world we perceive (Merleau-Ponty 2013). Our memories, for example, always center around a certain scene. Memories are not merely stored in our brains but also in all the circumstances we have been in. As an example, the treatment for amnesia typically does not merely involve the physical repair of the brain; instead, the patient may be brought to a place they had previously visited, thus allowing everything in that place to evoke their most personal awareness.

On the basis of this theory of being-in-the-world, Rosa emphasizes that if subjectivity is generated through eccentric positionality and that if subjectivity is the sum of experience and memory, then such subjectivity is formed not only between individuals but also among all things in the world. Subjectivity is not a prerequisite for being able to relate to the world; instead, it is a consequence of an individual's presence in world relations (Rosa 2020: 5). In this context, Rosa's version of Critical Theory extends the scope of research to the whole world. Moreover, Rosa differs from the aforementioned theorists on the matter of being-in-the-world in one crucial aspect: Plessner and Merleau-Ponty both argue that being-in-the-world is a prerequisite for the establishment of subjectivity, whereas Rosa extends the analysis to the social conditions under which this prerequisite can be established. Thus, he always emphasizes that his theory of resonance is not a mere philosophical anthropology or phenomenology but a sociology of world relations (Rosa 2019b: 37).

Rosa believes that before being-in-the-world, an individual must be situated in the world. Thus, world relations should be based on the premise of mutual openness. Rosa refers to this mutual openness in a metaphorical manner as listening–response. Accordingly, a relationship based on the notion of listening–response can be referred to as a resonant relationship. In the tradition of Critical Theory, Rosa places more emphasis on mutuality than on openness in terms of the concept of resonance, meaning not only that he regards listening–response as essential but also that the two parties listening and responding must be unique and always retain their distinctiveness. Thus, Rosa consistently underscores that resonance differs from echo and chorus because they involve only one sound without variation. Furthermore, subjectivity can be established only in a resonant relationship that is based on distinction. For this reason, Rosa also emphasizes that when we enter or are in world relations, we must not only continually (and actively) listen and respond but also passively allow the world to maintain its authenticity. Only when we are situated in the world in a noncontrolling, semipassive (or semiactive) manner can we develop resonant world relations (Rosa 2019c). If we attempt to appropriate the world and control it, we will stifle the voice of the world and live in a dead, silent world; moreover, if we control it to the extreme, we will lose control and have to contend with unpleasant results.

The term “world” is certainly a rather broad concept. If resonant world relations are to be analyzed in further detail, the various constituents of this concept should be considered. Rosa refers to the categories of resonance in world relations as axes of resonance and divides them into several ideal types: existential or vertical axes that relate to the sublime (e.g., the universe, religion, or art), material or diagonal axes that relate to the thing-world (in addition to matter and material objects, contexts of learning how to be in the thing-world [e.g., education] are also included), and social or horizontal axes that relate to interpersonal and social relationships.<sup>1</sup> Rosa asserts that in the development of modern society, human beings have established various axes of resonance in these domains to maintain resonant relationships, but paradoxically—and therefore deserving

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<sup>1</sup> Rosa admits from the outset that the distinction between these axes of resonance is only a sortation in the sense of Weberian ideal types, not an exhaustive one; thus, the axes of resonance are not limited to these three types (Rosa 2019b: 332). He has recently proposed a fourth type, namely resonance axes of self (Reckwitz and Rosa 2021: 249). However, Rosa has yet to provide a complete discussion of this fourth type of axis.

of critique—the development of modern society has also been accompanied by a rationalization process from which the emergence of instrumental reason has constantly undermined the axes of resonance. Rosa’s version of the concept of instrumental reason implies that modern society takes complete control of the world for the dynamic stabilization and expansion of humanity’s share of the world (*Weltreichweitenvergrößerung*) (cf. Rosa 2013). This type of control prevents human beings from listening and responding to the world, and it also eliminates the authenticity of the world and stifles its voice, leading to a lack of resonance between human beings and the world. According to Rosa, a relationship between humans and the world that has no resonance—that is, a relationship that lacks relationship—is an example of alienation (Rosa 2010; cf. Jaeggi 2014). Therefore, Rosa’s resonance theory or sociology of world relations is not merely an analysis of what constitutes the human subject or the constitutive conditions of a good life but also a Critical Theory that presents a critical view of the contemporary alienated state of the world that undermines resonance.

### **The dearth of clues about aspects of thing-world relations**

Rosa’s Critical Theory is clearly an extension of his predecessor’s theory on the basis of inheritance. Specifically, Rosa’s conceptions of resonance and alienation, along with Habermas’ “communicative action vs. instrumental/strategic action” and Honneth’s “recognition vs. misrecognition,” are essentially the same in that they regard reciprocity as a constitutive and normative condition of subjectivity while treating the destruction of reciprocity as an object of critique. Rosa extends the normative category of reciprocity from the mental and intersubjective worlds, which were previously the focus of Critical Theory, toward the thing-world, as is evident from his typology of resonance axes. Thus, Rosa’s proposal of a new concept called “resonance” may in part be a response to the fact that concepts such as communication and recognition can only be applied to individuals and would therefore be limited and insufficient.

The reason that the notions of communication or recognition are somewhat limited in terms of world relations is that they (more or less influenced by the German tradition of hermeneutics and *Geisteswissenschaft*) presuppose that reciprocity must be conditional upon mutual understandability on the basis of reason or spirit, and such a condition is considered to be plausible only among human beings (and reasonable ones at that). However, not only humans populate the world; many objects, especially nonhuman physical entities<sup>2</sup> that do not have communicative understandability, share the world with humans. Therefore, if the normative category of reciprocity in Critical Theory is to be extended from human beings to the world, a concept that does not involve communicative understandability as a prerequisite must be proposed. Rosa’s strategy (i.e., replacing communication or recognition with resonance) might be a reasonable approach because resonance is a purely relational state that requires only mutual openness and a distinction that maintains mutual authenticity, rather than communicative understandability. In his definition of resonance, however, Rosa specifically emphasizes that resonance must include the aspect of listening–response, which poses a problem for his theory:

<sup>2</sup> In this paper, the terms “thing,” “object,” and even “matter” and “material” are synonymous, meaning a nonhuman physical entity.

obtaining certainty that the world hears and responds to us is challenging. This problem is easier to address in a human world, where people can communicate with each other and directly confirm hearing and responses; by contrast, in a thing-world where communicative understandability is absent, listening–response represents a problem.

Being well aware of the mentioned problem, Rosa highlights the distinction between “the thing has something to say to me” and “this thing speaks to me” (Rosa 2020: 48). We cannot be certain that the thing is indeed speaking to us, but we can determine whether we are called by the thing or not. However, Rosa’s argument could easily turn the concept of resonance, which is supposed to refer to a relational state, into an arbitrary or unilateral subjective feeling. For example, Rosa argues that we can resonate with mountains even if we cannot specify whether they actually listen and respond to us (ibid: 49), but we cannot resonate with robot cats even if they can listen and respond to us through artificial intelligence technology with machine learning capabilities that we cannot grasp (ibid: 46). It is unclear why the relationship between humans and robot cats, which is more consistent with Rosa’s definition of resonance, cannot be resonant, whereas the relationship between humans and mountains, which cannot be explained, can be resonant. Moreover, numerous examples are available regarding individuals who, precisely because they felt in tune with a mountain and desired to listen to what it had to say, have been confronted with mishap; this is clearly not a state of resonance. In other words, “the thing has something to say to me” could represent a one-sided misunderstanding rather than bilateral resonance.

One reason for the confusion surrounding Rosa’s discussion of resonance to the thing is the dearth of clues in his resonance theory about aspects of thing-world relations that merit further discussion. Rosa simply emphasizes the belief that things do not have communicative understandability and that the resonant relationship between human beings and things is thus difficult to ascertain and is a consequence of modernity. In premodern or nonmodern societies, the relationship between human beings and things is much more diverse than that in modern society; modernization results in the gradual reification and objectification of the thing, causing a subject–object dualism between human beings and things. Even with the emergence of a subject–object dualism, humans still need to resonate with things, and modern society thus endeavors to establish axes of resonance between human beings and things. The notion of symmetrical thought recently proposed by Bruno Latour is a critique of the possible pathology caused by the reification of the thing (Rosa 2019b: 226ff.). However, Rosa’s discussion here falls short on at least two key points.

First, the “thing” is an extremely broad and internally heterogeneous category. Humans can reasonably be expected to have different relationships with different things. But Rosa’s discussion of the thing-world relation is general. He simplifies the relationship between human beings and things into two states, namely resonant and nonresonant (with “nonresonant” equaling “alienated”), without any specific analysis of the relationship between human beings and things; therefore, he does not consider the possibility of anything other than a resonant or alienated relationship between human beings and things. Even if a resonant or alienated relationship between human beings and things were possible, the resonance or alienation in the more-than-human world might not be the same as that in the human-only world.

Second, although Rosa indicates that the reification of things is a consequence of modernity and although he criticizes the notion of seeing things as essentially stable and nonperformatively constituted (because it results in the refusal to listen to the world and the stifling of resonance), he does not adequately envisage how things—especially in modern society—can be nonreified. If Rosa believes a reifying mode of thinking should not be applied to things, then he should explain how people should think about things and what people's relationship to a nonreified thing-world should be.

These matters that Rosa fails to address are central themes in a newly emerging school of theory—new materialism—which has been discussed extensively. By combining new materialism with Rosa's theory of resonance, we may be able to compensate for Rosa's shortcomings and complete his discussion in this regard.

### **Thing-world relations in neomaterialist theories**

New materialism (or neomaterialism) is a theoretical label that emerged in the 1990s and 2000s in response to a critique of the linguistic turn that was prevalent in the 1970s and 1980s (Coole and Frost 2010; Dolphijn and Tuin 2012). The respective theories under this label usually share at least two consensuses (Gamble et al. 2019). First, new materialism rejects the long-standing neglect of the existence and importance of the thing-world in social science; it argues that social science should return its focus to the relationship between human beings and things, especially considering the changes in the ecological environment and technological advances. Second, neomaterialists emphasize the distinction between their theory and conventional materialism. They argue that traditional materialism regards things as inertial, passive, and mechanical, whereas neomaterialism rejects this perspective. Many neomaterialists are deeply influenced by Gilles Deleuze's vital materialism and Bruno Latour's actor–network theory (ANT), both of which emphasize that things are vital, active, and creative. Under these two premises, considerable neomaterialism-related research has been conducted on the actantiality of things and the human–thing relationship, yielding a rich body of findings. In sociology, new materialism can even be regarded as a major new paradigm (Fox and Alldred 2017; Pyyhtinen 2016).

The basic assumptions of new materialism are highly similar to the starting point of Rosa's theory of resonance.<sup>3</sup> In contrast to Rosa, however, neomaterialists explicitly present an idea of a nonreified thing-world, namely a vital, active, and creative thing-world. Nevertheless, new materialism does not provide a clear image of the relationship to the thing-world. This can be attributed to the abundance of theories under the label of "new materialism," each with an approach that may differ considerably or even be opposed to others (Hoppe and Lemke 2021). This diversity does not mean that new materialism is confusing and irreconcilable. In fact, their opposition sustains a quadrant in which we can clarify the scope of thing-world relations. Two of these new materialist theories have a particularly marked opposition and thus warrant exploration: Karen Barad's agential realism and Graham Harman's OOO.

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<sup>3</sup> Rosa agrees that new materialism is a key theoretical resource for Critical Theory, and that it may be cross-referenced with his resonance theory. However, Rosa also deliberately distances himself from new materialism (Rosa et al. 2021). This matter is discussed at the end of this paper.

### Agential realism

Barad often identifies herself as a posthumanist; hence, her theory is often regarded as posthumanist neomaterialism. Because posthumanism itself is an interdisciplinary ideology, Barad, similar to many posthumanists, has a background not in the humanities and social sciences but in physics, with a PhD in quantum field theory. This may explain why Barad's new materialism work is often analyzed and considered in terms of concrete empirical examples.

Two examples are particularly crucial in Barad's research. One is Niels Bohr's quantum theory (Barad 2007a). When confronted with the mystery of the classic double-slit experiment in quantum mechanics, Bohr explains that although physics has traditionally regarded things as existing independently of human beings and thus as being objective in nature, the wave-particle duality of light means that the instrument through which light is observed determines whether light is a wave or a particle. With the type of observational reference and apparatus set by the researcher, light objectively manifests that which it is expected to become. Barad calls this "onto-epistemology." Barad draws inspiration from Bohr's statement and attempts to expand it into a sociotheoretical proposition: the reality of things has a particular manifestation under a particular observing agent. Barad terms her proposition agential realism (Barad 1999). According to agential realism, things are not intrinsically fluid and homogeneous forces but rather manifest specific agency through specific practices under specific ideas. The agency of things is an effect that inherently occurs through mattering under material-discursive practices. This is why Barad also calls her new materialism "performative materialism" (Barad 2012).

The reason why agential realism, inspired by Bohr, could be considered a social theory is that it is not only applicable to the field of quantum mechanics but can also be applied to analyzing the social world. Ultrasonography for pregnant women is the second, and perhaps most comprehensible, example within Barad's research (Barad 2007b).<sup>4</sup> Ultrasound was originally applied during World War I for navigation and ranging of submarines (i.e., sonar). In the late 1930s, ultrasound technology was first applied in medicine; subsequently, ultrasonography emerged, which had potential for application in pregnancy examination. Once the technology had matured, ultrasound instruments for fetal examination in obstetrics and gynecology were manufactured. The ultrasound itself indeed does not have the ability to create images or perform pregnancy examinations; this agency is only possessed by humans after they have created and operated a specific apparatus that is based on the application of certain concepts. The ultrasound image of the fetus displayed on the screen is not particularly clear; an individual cannot see the fetus through the ultrasound device but can only observe the ultrasound image on the screen after it is made available by the device. The interpretation of this image requires professional training (and even with training, misinterpretation is possible).

Although the ultrasound device does not provide a clear picture, it does allow people to "see" the unborn fetus. Previously, only when a baby left the mother's body and entered the world did it present an objective image of human vitality to everyone. However,

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<sup>4</sup> Pregnancy ultrasound screening was originally presented as an example in Judith Butler's study (Butler 1993). However, Barad was dissatisfied with Butler's discussion and thus reanalyzed this example through the lens of agential realism.



with the advent of ultrasound devices, families commonly announce the arrival of a new member by displaying an ultrasound image of the fetus. That is, ultrasound images have replaced childbirth as the criterion for being deemed a human being. Thus, in the context of the ultrasound screening of pregnant women, the ultrasound is given a special reality, and its agency is recognized through the creation of the apparatus; moreover, a human being is regarded as a human and is recognized as having agency through the ultrasound machine. On the basis of the aforementioned examples, Barad proposes an argument that pushes Latour's claim to an even further extreme: that human beings and things are not merely symmetrical in relation to each other but are fundamentally mutually constitutive. According to Barad, if traditional sociology is regarded as focusing on the interaction between individuals (i.e., between two real subjects), then today's sociology, at least when discussing the relationship between humans and things, must change its narrative: human beings and things are not two entities, but rather they function in a set of relations that create the reality and agency of both. Therefore, an "intra-action" rather than interaction exists between human beings and things.

Although Barad's simultaneous presentation of several original concepts may seem confusing, her agential realism theory is essentially an attempt at identifying a relatively clear point: the reality and performance of things are constituted by the onto-epistemology and practice of human beings. However, the mattering of things in human practice also defines human beings and determines human reality. Intra-action is essentially the idea that human beings and things are dialectically constituted by each other. Accordingly, Barad's concept of intra-action and Rosa's notion of resonance are highly similar because they both suggest that the human subject must be situated in a world relation in order to be formed.<sup>5</sup> Nevertheless, Barad goes further than Rosa in analyzing how things must also be situated in world relations in order to constitute their reality as well as in explaining what effect such things have on the constitution of human subjectivity. Baradian new materialism may provide a nonreifying viewpoint that treats things as vibrant matter (cf. Bennett 2010), potentially enriching Rosa's theory.

As mentioned, agential realism is only one of the approaches in new materialism. Many of those who are regarded as neomaterialists oppose Barad's arguments, not simply because of standpoint differences but also because Barad's theory has shortcomings. The fiercest barrages of attacks have come from Harman.

### OOO

Harman's OOO, which he has been developing since 1999, is a philosophical theory that involves debating and exploring things or objects (Harman 2010, 2013a). Harman clearly demonstrated his disagreement with new materialism after the rise of the label "new materialism" and emphasized that his own OOO was more of an "immaterialism" (Harman 2016). Notably, his immaterialist discussion ultimately led him to a different and novel theory of new materialism, prompting the academic community to regard

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<sup>5</sup> Agential realism and resonance theory share a common metatheoretical position, which is one of the main reasons for their affinity. Barad is a strong proponent of relational ontology, and Rosa has recently admitted that he is also a supporter of relational ontology. They both emphasize the primacy of relationship over essence (Barad 2003; Reckwitz and Rosa 2021: 184, 277).

OOO as one of the representative aspects of new materialism (cf. Hoppe and Lemke 2021).

Harman's preference for referring to his theory as immaterialism instead of (new) materialism is rooted in his dissatisfaction with three previous philosophical discussions about things (Harman 2013b, 2016, 2017). The first, which Harman calls "undermining," refers to the notion that things should be studied by continually dismantling them until the final unit cannot be further divided, thus enabling the exploration of the most basic elements that constitute the things under study. Traditional materialists would agree that all things are made of the same ultimate basic elements and that a complete understanding of the basic elements of things would enable the understanding and mastery of everything. However, Harman argues that undermining is untenable because it ignores the phenomenon of emergence; that is, it ignores the fact that real objects themselves often have qualities that their constituent elements do not possess. The second approach, called "overmining," is also considered implausible by Harman. Overmining refers to the idea that anything must be placed in a network of relationships in order to define its own nature, and that only then can it be explored and understood. For example, a piece of wood with four legs becomes a table when a vase of flowers, a dinner plate, or fruit is placed on it; however, when we sit down on it, it becomes a chair. Whether it is a table or a chair depends on the relationship it is situated in. Latour's ANT and Baradian relational ontology are also referred to as overmining. Nevertheless, in Harman's view, overmining ignores the fact that real objects are already real before they enter the relationship and that real objects produce different effects in different relationships, which proves that real objects can change apart from the relationship; overmining ignores this possibility of change. Harman notes that undermining and overmining are the more extreme approaches and that the vast majority of studies do not adopt only one of these approaches but rather the third approach called "duomining," which incorporates the first two. Duomining is a mathematical approach (i.e., plotting various mathematical relations) for constantly determining the ultimate constituents of real things. However, Harman believes that duomining merely incorporates the shortcomings of undermining and overmining without improving anything.

To address the major deficiencies of the three reductionist approaches, Harman proposed the OOO of antimining, the aim of which is to develop a set of propositions about the object: every real object is nonreducible (i.e., a closed, autonomous absolute entity) prior to any relation. A real object is an absolute *Ding-an-sich*, existing independently of human consciousness; thus, human knowledge of all things (whether presented in words, mathematics, or in any other way) can only ever be one sided and indirect. This is a type of absolute realism. Furthermore, because of nonreducibility, all things are equal to each other. This includes the fact that man is merely a type of thing, no different from mountains, rivers, or trees. The human being is no more or less real than any other thing. OOO is thus a flat ontology that is diametrically opposed to anthropocentrism, human subjectivity, reason, and intersubjectivity; instead, it regards all of these equally as things, using objectcentrism, objectivity of things, materiality, and interobjectivity as a starting point for an exploration of all things (Harman 2017: 55).

Because all things are equal entities, things are never truly related or connected to each other; instead, an antagonistic tension is present between them. This antagonistic

tension resulting from the absolute reality of things is the foundation of the relationship between things that defines each side's nature—a perspective embraced by proponents of overmining (if a relationship did exist, it would probably only be a one-sided construction between humans and some type of sensual object regarded as a “human being” through its perceived nature). However, this relationship would involve either a nonmutual coexistence or elimination of each other. For example, if a human being eats a puffer fish, the act of consumption does not define the nature of the human and the fish. Instead, the death and disappearance of the puffer fish is a result of the human being slaughtering and eating it; the eater may be unilaterally satisfied by gaining mouthfuls of food (nonmutual coexistence) or may die as a result of eating the poisonous parts of the puffer fish, leading to mutual elimination. At this point, both the human being and puffer fish exert an action force on each other, but the agency of both derives from the reality of both; once both are mutually eliminated, any agency is no longer possible. Accordingly, Harman stresses (and again refutes overmining) that things can act after their reality is established, not that things become real through their action.

Both OOO and agential realism are central theories of new materialisms, but the disagreement between them is clear. Harman has not only criticized agential realism based on relational ontology but also faced backlash from the opposing parties (Bennett 2012). However, if we integrate their theories instead of merely exploring their opposition, then we may be able to develop something new.

### **Quadrants of thing-world relations**

A central concept of Barad's agential realism is intra-action, which implies that human reality and material reality are mutually constitutive in relation to each other. In addition to Barad's own example of the ultrasound screening of pregnant women, many recent empirical studies of new materialism or science, technology, and society have demonstrated this idea (e.g., Fisch 2018; Lien 2015; Tsing 2015). However, under the critique of OOO, agential realism does exhibit several shortcomings.

First, Barad insists on the term “intra-action” instead of “inter-action” because she believes that inter-action refers to two opposing entities acting on each other. Nevertheless, she argues that human beings and things do not have a reality before they are in a relationship and that they are constituted within the relationship. However, not all things are formed in relation to human beings, and human beings and things are not always in a mutually constitutive relationship. The reality of things can often be unrelated to their relationship to human beings. For example, a mountain has not become real because we climb it; in fact, we climb it—as the famous mountaineer George Mallory famously put it—“because it's there.”

Second, just as individuals can exhibit sharp contrast to each other, mutually exclusive tensions can also exist between human beings and things and between things. Mallory's climb up Mount Everest not only failed to yield a mutual reality but also led to his death. This mutual exclusivity is found in the opposition between human beings and things, in addition to being observed even when human beings are included in things (or vice versa). Timothy Morton, a follower of Harman and a leading figure of OOO, states this empirically in his ecophilosophical theory, especially in his concept of the hyperobject (Morton 2013). A hyperobject refers to a physical reality that exists in space and

time in a vastly dispersed manner and is so vast that it is beyond human knowledge and understanding; examples include icebergs, tsunamis, earthquakes, typhoons, oceans, climate, planets, galaxies, and black holes. Although we still have lexical concepts that refer to these hyperobjects and are thus not ignorant of them, our references to them are abstract and vague because of the vast nature of hyperobjects. Because of technological advances, we can now visualize these hyperobjects in various manners, as if we could see them; nevertheless, the diversity of visualization precisely means that our understanding of hyperobjects is necessarily only indirect and one sided. In addition, this overwhelming magnitude implies that all mankind is also situated in the hyperobject, but this does not mean that human beings are the constituent elements of the hyperobject; in fact, earthquakes and typhoons are often devastating to human beings, even if we are situated in them.

Although OOO is reasonable, agential realism is certainly not entirely incorrect. Agential realism and OOO are not so much opposed because they are concerned with theoretical blind spots that the other does not discuss. These blind spots also reveal an oversight of Rosa's theory of resonance: the relationship between human beings and things is not unitary. When regarded from a combined perspective of OOO and agential realism, human beings and things could be related before reality, a phenomenon Barad calls "intra-action"; however, according to OOO, the reality of human beings and things may also precede the relationship between them, yielding an interaction relationship. Moreover, human beings and things can potentially fulfill each other in their relationships, but they can also be mutually exclusive (or even mutually destructive) rather than mutually inclusive. This means that if we combine OOO and agential realism as the two extremes of new materialism, then we can draw two relational axes: one constituted by intra-action and interaction, and the other constituted by inclusion and exclusion. These two axes can be crossed together to form a quadrant that reveals the fourfold relationship between human beings and things.

The first type of relationship is the one Barad envisages, where human beings and things constitute each other in intra-action. In this case, the subjectivity of the human and the performativity of the things are engendered by the relationship between them. This also means that human beings and things are open to and integrated with each other in an intra-action relationship. This is precisely the mechanism for the formation of human subjectivity as explained in Rosa's resonance theory; therefore, this context is named "resonance" in this paper.<sup>6</sup> The formation of the reality of human beings and things in a resonant relationship does not mean that human beings have no subjectivity or that things have no property or effect of their own before the resonant relationship. Subjectivity and performativity are not fixed but always have the possibility of being shaped and reshaped.

An example of this is Michael Fisch's anthropological study of the Tokyo Metro (Fisch 2018). Fisch points out that the operation of the subway is a complex phenomenon. Each train needs electricity, cars, platforms, and other hardware to make it possible. Because of the human activity, the subway is formed a level of performativity that is not present

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<sup>6</sup> Rosa himself has pointed out that there is indeed a high degree of similarity between his theory of resonance and Barad's concept of intra-action (Reckwitz and Rosa 2021: 184).

in all the things that make up the subway. And once the subway is running, it requires railroad personnel to constantly adjust the speed or frequency intervals of trains based on high/low traffic rhythms, weather, and other factors (i.e., to reform the performativity of the subway). In the meantime, the construction of the subway system has created a modern human commuting landscape, generating a large number of commuters (forming a subjectivity that the people did not have before). Fisch has even observed that many commuters may take the subway in such a way that the rhythm of the subway's swaying may be coordinated with the unconscious rhythm of the napping passengers, so that even sleeping passengers who do not hear the announcement of the arrival of the subway may suddenly wake up and get off the subway in a hurry because the rhythm of the car is out of tune with their own. Fisch concludes that there is a mutual openness between humans and objects, and that it is in this mutual openness that objects and humans form and reform each other.

This also reveals that if we use this quadrant of new materialism to present thing-world relations, then we can define Rosa's concept of resonant relationship to the thing-world—based on an agential-realist approach to new materialism—as a context in which both human beings and things are shaped or reshaped (i.e., intra-action) through mutual inclusion. The advantage of this definition is that the resonant relationship between human beings and things no longer needs to be judged by the somewhat anthropomorphic (and thus possibly inappropriate) rhetoric of listening–response; instead, the neomaterialist (and thus nonreifying) concept can be employed as a criterion based on whether mutual inclusion, or reciprocal (re)formation, is present.

A resonant relationship between human beings and things is only one type of relationship between them. The notion that human subjectivity cannot be formed without objects or that the performativity of things necessarily requires the material-discursive practices of human beings is false. According to OOO, human beings and things can also encounter each other with an existing reality of their own, a phenomenon Barad calls “interaction.” Furthermore, such encounters may have conflicting tensions; that is, they may result in one or even both sides of the relationship losing some part of themselves or may even result in direct annihilation. For example, tsunamis are caused by submarine earthquakes, and volcanic eruptions are triggered by the movement of the Earth's crust. None of these require material-discursive practices by humans, but humans are in great danger of losing their lives when they encounter tsunamis, high-temperature magma, or volcanic ash, which certainly does not help the formation of subjectivity. This second relationship between human beings and things could be called a “catastrophe.” In a catastrophic relationship, one, or even both sides, are not included in any way but rather excluded. Perhaps we can “listen” to the dynamics of a volcano (and regard it as a type of volcanic response to us), but this listening–response is not for resonance but for the prevention of an eruption or the planning of an escape; this is because the eruption of a volcano is unrelated to human beings and will only destroy those who encounter it.

Critical Theory is a set of theories with value judgments, and Rosa's theory grants resonance a justified positive value judgment. Furthermore, Rosa provides a negative assessment of the opposition of resonance. However, although the catastrophic relationship between human beings and things is undoubtedly opposed to resonance, it is not necessarily a good or bad concept. Critical Theory involves immanent critique; that is,

it only criticizes the problems caused by human practice. The catastrophes caused by tsunamis and volcanic eruptions are not man-made events; thus, they cannot be morally condemned (Boltanski et al. 2018; Jaeggi 2018; Stahl 2022; cf. Weißmann 2017). This perspective does not imply that catastrophes can never be criticized. We might, for example, not directly experience a catastrophe, but we can still enter into conflict with things owing to the expansion of humanity's share of the world, as describe by Rosa. This is when we are responsible for the arrival of a catastrophe and when such a catastrophe becomes a topic that can be explored in terms of Critical Theory. Ecological crises or Ulrich Beck's theory of risk society is analyzed in this sense. In this way, this is why the anthropocene concept has had a political and economic impact far beyond the geosciences, as it tends to bring the entire physical world into the realm of human practice, bringing the full range of catastrophe relations into the moral realm (cf. Lewis and Maslin 2018). The concept of the Anthropocene, however, has always been controversial. The extent to which the object-human catastrophic relationship is really attributable to human practices is subject to context. This is a question for empirical research.

Similarly, another type of value judgment exists; this type of value judgment depends on the circumstances in which human beings and things relate to each other in the context of an existing reality. However, in such circumstances, the relationship of both does not exclude the other but rather includes it; that is, it increases, changes, or extends the original reality. This third relationship is referred to as "appropriation" in this paper. Appropriation is a vital concept for the new generation of Critical Theorists such as Rosa and Rahel Jaeggi. However, Rosa and Jaeggi have opposing views on appropriation. According to Rosa and Jaeggi, appropriation refers to the process through which the subject absorbs and internalizes external things to produce agency. Jaeggi argues that appropriation is one's solution to the crisis of alienation in modern society through reintegration with the world opposed to oneself (Jaeggi 2014). However, Rosa holds that the appropriation of the world simultaneously eliminates, or at least impairs, the appropriated object's reality, which is detrimental to the world and world relations; in addition, instead of overcoming the alienation crisis, it prompts or exacerbates the alienation crisis (Rosa 2019b, 2020).<sup>7</sup> The appropriating party receives agency through inclusion, but for the appropriated party, this may be a denial, or exclusion, and thus a catastrophe (hence, Table 1 includes a dotted line between appropriation and catastrophe because the appropriation of one party may be a catastrophe for the other). However, appropriation in interaction is not necessarily only a unilateral inclusion; it can also be bilateral, and in this context, appropriation is not necessarily negative as Rosa and others have criticized. For example, a human being can pick an apple from a roadside apple tree, eat it, and then discard the core. The apple tree does not grow apples because the human being eats it; this is what Barad calls "interaction." By eating the apple, the human being is including it in their body, thus forming an appropriation relationship with the apple. The apple is not eliminated by the appropriation. Instead, apples can sprout in new places and grow into new trees because of human beings eating and discarding them or because of the fact that many of the fruits need to be consumed before they can reproduce. Thus, the

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<sup>7</sup> Rosa is not alone in this critique of Jaeggi; other key members of the new generation of Critical Theory (such as Robin Celikates) share similar doubts about Jaeggi's conception of appropriation (e.g., Celikates 2018: 143).

**Table 1** Quadrants of thing-world relations

	Intra-action	Interaction
Inclusion	Resonance	Appropriation
Exclusion	Alienation	Catastrophe

question of whether interaction between human beings and things would cause a catastrophe or mutual appropriation is not a matter of absolute theoretical right or wrong (in short, Rosa's criticism of Jaeggi is not necessarily right, and Jaeggi is not necessarily wrong); instead, it is a matter of an empirical analysis of whether inclusion in interaction is bilateral or unilateral (and thus causes a catastrophe to the other party).

The fact that a catastrophe and appropriation cannot necessarily be criticized does not suggest that nonresonant situations are all empirical matters. In the aforementioned quadrant, we can observe a fourth situation that involves intra-action between human beings and things that do not constitute each other but rather produce exclusion. Neither Barad nor Harman discusses this situation, and Rosa only discusses it to a limited extent. Barad's theory is somewhat posthumanist techno-optimistic, suggesting that humanity can drive progress and liberation through the creation of technology and combination of technological objects. This suggestion is certainly not the case. A typical and extreme example of this is nuclear weapons. The reality of nuclear weapons is constituted by the material-discursive practices of human beings, and the agency of nuclear weapons changes the reality of human beings. Nevertheless, the intra-action of human beings and nuclear weapons is to allow the nuclear weapons to explode and destroy humankind, ultimately resulting in the exclusion of each other. This mutual constitution causes confrontation and even exclusion, a typical alienation. In contrast to catastrophes, alienation is the direct consequence of human practices (especially intra-action) and thus falls directly within the realm of immanent critique. Moreover, in interaction, because the participants are two entities, inclusion or exclusion can be unilateral or bilateral, and only empirical research can determine whether it is a catastrophe or appropriation or critical or noncritical. This relationship differs from a relationship of alienation, which arises from intra-action and whose participants are mutually determined. Therefore, alienation is necessarily bidirectional and must thus be carefully considered.

Rosa is of the same opinion. He extensively discusses alienation because he regards it as the most severe problem for modern society (Rosa 2009). However, his discussion of the alienated relation to the thing-world is vague compared with the rest of his resonance theory. He only observes that the alienated relation to the thing-world manifests itself mainly in the excessive domination of the thing-world by human beings, resulting in the silencing of the thing-world (thus eliminating the possibility of resonance) or even in uncontrollable negative reactions. He then generally agrees with and adopts Jaeggi's definition and defines alienation as the relation of relationlessness, which is regarded as the opposite of resonance and a situation worthy of criticism. However, both Rosa's and Jaeggi's definitions are somewhat contradictory and difficult to understand (e.g., the notion that participants in a relationship can be both relationless and in a relationship with each other at the same time), and neither of them clearly explains why the excessive domination of things by humans causes alienation (i.e., how derelationalization

of relation occurs and what the mechanism of derelationalization is). If we adopt this quadrant, which is based on a synthesis of new materialism, we can further clarify the definition of alienation proposed by the new generation of Critical Theory: a relation of relationlessness means that in intra-action, exclusion (whether unilateral or mutual) occurs, causing a situation where the reality of the two parties is eliminated instead of established. This quadrant is advantageous not only for redefining the resonance of the relationship between human beings and things but also for demonstrating the alienation of the relationship between human beings and things. Specifically, we need not judge whether a relationship between human beings and things is alienating in terms of whether one party in the relationship refuses to listen to or forbids responses from the other party or whether the party is overcontrolling or out of control; instead, we can critique the relationship by considering whether exclusion occurs (i.e., whether the relationship is destroying, diminishing, or eliminating reality unilaterally or bilaterally in the context of mutual constitution).

The four categories of thing-world relations identified by this quadrant can be explored in greater detail. As mentioned, in the case of interaction, a distinction is made between bilateral and unilateral inclusion and exclusion, which also determines whether catastrophes and appropriation fall within the realm of critique. A more detailed discussion would require further (empirical) analysis, but such a comprehensive examination is not feasible in this paper because of the scope of the subject and the length of the paper. Nevertheless, this primary analysis indicates some aspects where the shortcomings of Rosa's Critical Theory on the resonance and alienation of thing-world relations could be improved, leaving ample room for further research.

## Conclusion

The most valuable contribution of Rosa's social theory is the extension of the scope of Critical Theory from the individual world and the social world to the thing-world; thus, the analysis of the constitution of subjectivity and the self-realization of the subject is extended from the problem of communication and recognition between subjects to the problem of the resonance between human beings and things. However, Rosa's analysis of the thing-world is somewhat insufficient; hence, the aspect of his resonance theory addressing the relationship to the thing-world is limited and even contradictory. The present article provides an attempt to apply new materialism to the thing-world to compensate for the missing elements of Rosa's resonance theory. Similar to resonance theory, new materialism does not regard things as inertial, passive, and mechanical; instead, it goes further to argue that things should be regarded as vital, active, and creative. This consequently results in the neomaterialist approach further developing a rich set of relationships to the thing-world. In this article, an examination and integration of two of the most representative theories of new materialism, namely agential realism and OOO, yield four types (or quadrants) of thing-world relations based on intra-action or interaction and on inclusion or exclusion: namely resonance, alienation, appropriation, and catastrophe.

The introduction of the quadrants of the thing-world relations can remedy the insufficiency of Rosa's discussion of thing-world relations. The relationship between human beings and things is not either resonant or alienating; instead, it is considerably more



varied. Relationships that are not resonant should not necessarily be criticized. Furthermore, this quadrant can provide a clearer criterion for resonance in Rosa's Critical Theory; that is, we can examine whether the intra-action between human beings and things can increase, extend, or transform the subjectivity of human beings and the performativity of things. If human beings and things produce exclusion in intra-action, namely reduction, contraction, or impairment of the reality of both parties, then this is an alienated relationship to the thing-world that deserves criticism. In addition, this criterion can be employed to examine empirically whether appropriation and catastrophes also produce excluding situations that engender an unfortunate or unsuccessful life.

In this article, the attempt to combine (Rosaian) Critical Theory with new materialism does not mean that the two theoretical approaches are highly consistent. A key difference between Critical Theory and new materialism is that neomaterialists commonly disregard the difference between human beings and things (not always, but at least agential realism and OOO do), with the consequence being that human qualities, power, suffering, and responsibility are eliminated. Nevertheless, Critical Theory has consistently maintained a humanist concern (Rosa et al. 2021; cf. Fox and Alldred 2017). The position of Critical Theory is also adopted in this article. Accordingly, considering exclusion in the quadrant of the thing-world relations, the human being is presupposed as the locus of ethical judgment; this thus means that whether the human being is a cause (or one of the causes) that leads to exclusion determines whether the relationship represents alienation or a catastrophe that needs to be criticized.

This article also presents a perspective that slightly deviates from the arguments of Rosa or other new-generation Critical Theorists. Both Rosa and Jaeggi argue that the most critical pathology of modern society is alienation. Nevertheless, the problem may not simply be that of alienation but instead that of the mechanism that causes it, which is the exclusion mentioned in this paper. In the thing-world relation, exclusion does not only cause alienation but also engenders a catastrophe that can be criticized as well. The contemporary social logic of exclusion is observed in both the thing-world relation and many other aspects. For example, the intellectual activity of modern society is becoming increasingly a purely numerical calculation that excludes the experience and understanding of the individual. In the process of enthusiastically applying artificial intelligence to various high-tech products, we are also excluding ourselves from the use of these products; for example, the pinnacle of innovation in driving technology is regarded as minimal need for human intervention, and the less a human physician is involved in medical diagnosis procedures, the more advanced the diagnosis is. Humans are even planning and attempting to leave Earth to migrate to another planet (i.e., to exclude ourselves completely from Earth). Thus, the question arises whether Critical Theory can be modified from a critique of misrecognition to a critique of alienation or even from a critique of alienation to a critique of exclusion. This might be a direction for further reflection.

#### Abbreviations

OOO	Object-oriented ontology
ANT	Actor-network theory

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