PART I

Foundations of Communicative Materialism

CHAPTER 2

Materialism

Critical theories are materialist theories. Materialism neither means an approach that stresses determination by the economy nor one that stresses the role of things. Materialism stresses that the world is dynamic, dialectical, a relation, and a process – a form of contradictions that enable change and development. This chapter covers some foundations of materialist philosophy, namely the concept of matter (2.1) and the dialectic (2.2).

2.1. Matter

Aristotle[1] opposed the reductionist materialism of atomists such as Leucippus, Democritus, Empedocles, or Anaxagoras. Atomism reduces all being to atoms as a primary substance. Aristotle sees matter (*hylé*) as standing in a relation to form (*morphé*, *eîdos*). Matter and form together constitute essence. Form is 'shapeliness that is worked into the perceptible thing',[2] the 'what-it-was-to-be-that-thing'.[3] Matter is 'an item that is not in itself a something and is also not a quantity nor said to be any of the other things by which that which is is defined',[4] 'the first thing that is no longer said to be made-of-this in reference to any other thing'.[5]

Aristotle

Matter has the potential (*dynámei*) for change. For Aristotle, matter has the potential (*dynámei*) for change. In Hegelian terms, we can say that matter can

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[1] Aristotle 1999. *Metaphysics*. Santa Fe, NM: Green Lion Press.
[2] Ibid., § 1033b.
[3] Aristotle. 1998. *Metaphysics*. London: Penguin. § 1035b.
[4] Ibid., § 1029a.
[5] Aristotle 1999. *Metaphysics*. Santa Fe, NM Green Lion Press. § 1049b.

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form being-there (*Dasein*). It is being-in-possibility. As a consequence, matter is primary to form. Matter 'is in potency because it goes toward a form; but whenever it is at work, then it is in that form'.[6] For Aristotle, matter is other than for the atomists: Not static, but dynamic. Matter exists 'in those things of which there is a coming-into-being and a change into one another'.[7] In nature (e.g. stones, fires), matter is 'able to be moved by itself',[8] whereas in society (Aristotle mentions the example of dancing) it 'can be moved by other things',[9] (i.e. humans). Aristotle opposes the atomists' reductionist concept of matter: The totality that emerges from the connection and synergies of parts is not reduceable to them, i.e. the whole is more than the sum of its parts.

Aristotle was one of the first dialectical materialists. Ernst Bloch[10] stresses that the Aristotelian Left argues that Aristotle defines matter as dynamic being-in-possibility (*dynámei ón,* δυνάμει ὄν), as objective possibility. According to Bloch, this Aristotelian concept of matter questions mechanistic materialism and can also be found in the works of Avicenna, Averroes, Giordano Bruno, Spinoza, Schelling, Hegel, and Marx. For Marx and Engels, society is a material system, in which humans produce relations and processes that have contradictory character and form. Society is a developing totality.

Space and Time

Space and time are the two central dimensions in the organisation of matter. Space is the next-to-one-another of units of matter. We therefore say: A exists in a certain spatial distance from B. Time is the after-one-another of units of matter: C takes place before or after D. Time has to do with the change of particular forms of matter. Time is matter's form of existence. Since time is not static, but dynamic, it changes its form. On the one hand, one form of matter can over a longer period of time turn into a new organisational form of matter. On the other hand, all being-there (*Dasein*) differentiates its form. In inanimate objects such as stones change is slower than in living forms of being. Living beings are cell organisms whose cells reproduce and differentiate themselves. In society, humans change structures through action and communication so that structures condition and enable further action and communication. If one records the condition of a certain form of being, then waits, and then again records the object's condition, then one can at a certain level of organisation

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6   Ibid., §1050a.
7   Ibid., §1044b.
8   Ibid., §1034a.
9   Ibid., §1034a.
10   Ernst Bloch, Ernst. 1972. *Das Materialismusproblem, seine Geschichte und Substanz.* Frankfurt am Main: Suhrkamp. Ernst Bloch. 2018. *Avicenna and the Aristotelian Left.* New York: Columbia University Press.

observe change. Such changes are an indication that structures develop in time. Time is the development of being-there (*Dasein*) from one condition to the next. Time is the duration of a process, a sequence of events that form a process. It is irreversible, which means that something existent at a certain point of time has a certain condition and cannot return at another point of time into exactly the same condition.

Matter's Becoming

Matter changes continuously in time. It is dynamic. Time 'itself is this *becoming*, arising, and passing away'.[11] All forms of matter have a beginning and an end. Matter is eternal because it is being's form of being and there must always be something. Matter is the world's process-substance. Matter is universal: It has no beginning and no end. Therefore time also is eternal.[12] Time is the order and directedness of being into the past, present, and future. 'The *present, future,* and *past,* the dimensions of time, constitute the *becoming* of externality as such, and its dissolution into the differences of being as passing over into nothing, and of nothing as passing over into being'.[13]

Matter's dialectic of space and time means that instances of being (*Dasein*, being-there) exist next to one another and after one another. 'Like time is the after-one-another of contents, space is the next-to-one-another of things'.[14] Forms of matter exist next to one another in space, where they condition each other mutually. The content of matter is a sequence of events, in which forms that exist next to one another pass into each other. Matter is the dialectical unity of spatial next-to-one-another and temporal after-one-another. Hegel therefore stresses that matter is the dynamic, dialectical unity of space and time: 'This *passing away* and self-*regeneration* of space in time and time in space, in which time posits itself spatially as place, while this indifferent spatiality is likewise posited immediately in a temporal manner, constitutes motion. To an equal extent however, this becoming is itself the internal collapse of its contradiction, it is therefore the immediately *identical* and *existent* unity of place and motion, i.e. *matter*'.[15] In the development of matter something new emerges out of the old so that the particular form of existence of the old being ceases but takes on a new form in the sublated existence. The dialectic of being and nothingness

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[11] Georg Wilhelm Friedrich Hegel. 1970. *Hegel's Philosophy of Nature. Volume I. Edited and translated by M. J. Petry.* London: George Allen and Unwin. § 258, Remark.

[12] Ibid., § 258, Addition.

[13] Ibid., § 259.

[14] Translation from German: Hans Heinz Holz. 2005. *Weltentwurf und Reflexion. Versuch einer Grundlegung der Dialektik.* Stuttgart: J.B. Metzler. p. 170.

[15] Hegel, *Hegel's Philosophy of Nature*, §261.

is matter's dynamic of development through which it is a process-substance. 'Something becomes an other, but the other is itself a something, so it likewise becomes an other, and so on *ad infinitum*'.[16]

Matter, Interaction, Communication

Matter interacts but does not necessarily communicate. Stones do not communicate in a rockfall. They do not say to each other, 'Come on, let us together plunge down into the valley'. Rather, erosion, rainwater, meltwater, or living beings trigger the rockfall, in which rocks move simultaneously, collide, splinter, and finally come to a standstill and remain in a new formation on even ground. Interaction means that forms of matter impact each other. The stone does not know that it plunges, splinters, and comes to standstill. The situation is wholly different in a class society, in which the oppressed reach a point where they say to each other 'Let us overthrow the slave-master's rule, let us break his power so that his mastery comes to an end'; then we can speak of interaction as communication because there is an intentional engagement. Communication is goal-oriented understanding, which does not imply that only humans communicate. Other highly developed mammals such as dolphins, dogs, gorillas, chimpanzees, and elephants communicate, perceive, and react to each other's intentions, and learn from each other.[17] Humans, in contrast to other animals, communicate with practical rationality, use language in a complex manner and assess the condition of the world before, while, and after they act and communicate. Humans can evaluate, modify, and change their social action through communication.

Stones do not have to say anything to each other. They do not communicate. Higher mammals have to say something to each other in order to organise their sheer existence. They communicate pre-linguistically. In communication and work, humans evaluate, reflect on and anticipate the world. Marx analyses human activity's anticipatory character in the following manner: 'A spider conducts operations which resemble those of the weaver, and a bee would put many a human architect to shame by the construction of its honeycomb cells. But what distinguishes the worst architect from the best of bees is that the architect builds the cell in his mind before he constructs it in wax. At the end of every labour process, a result emerges which had already been conceived by the worker at the beginning, hence already existed ideally'.[18]

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[16]   Ibid., § 93.

[17]   Alasdair MacIntyre. 1999. *Dependent Rational Animals. Why Human Beings Need the Virtues.* Chicago, IL: Open Court. pp. 50–51,

[18]   Karl Marx. 1867/1976. *Capital. A Critique of Political Economy. Volume One*. Translated by Ben Fowkes. London: Penguin. p. 284.

Society's complexity is reflected in the complexity of linguistic communica-
tion. Communication is, just like work, a moment of the human being's active
production of the world, the production and reproduction of society. Humans
produce society through reflexive, self-conscious, anticipatory and communi-
cative action and in active communication.

Matter is the self-producing and self-reproducing process-substance of the
world. One can ask and find out about any particular form of matter, when
it begins and ends. But posing the same question about matter itself is not
meaningful because something cannot emerge from nothing, but only from
something else. Materialism is in this respect different from all religious
ideology that believes in divine creation. Matter exists in religion, whereas the
content of religion is belief in something that does not exist. Something always
has to exist. Before and after each instance of matter, another instance of mat-
ter exists. Matter is eternal. It neither has a beginning nor an end. It develops.
Matter is dialectical. But what is this dialectic all about? The next section will
deal with this question.

2.2. The Dialectic

For Slavoj Žižek,[19] retroactivity is the temporal dimension of being's dialectical
logic. Forms and entities of matter that are related contradict each other. They
negate each other, which means that they at the same time exclude and require
each other. Development means that there are moments when the negation is
itself negated so that the contradiction turns into new qualities of being. After
such a negation of the negation the result of development becomes the starting
point of a new dialectical process. The dialectic is therefore endless, its result
is posited as the presupposition and the beginning of a new dialectical contra-
diction. The positing of the end and the result as beginning and new point of
departure is a moment of the dialectical logic that enables becoming.

Sublation (Aufhebung)

In a dialectical process, something emerges from something and at the same
time something disappears into noting. Being sublates itself. Dialectical devel-
opment is a sublation. 'Sublation' is the English translation of the German
Hegelian term 'Aufhebung'. Sublation combines the words 'substitution' and
'elimination' into one. The German *Aufhebung* has three meanings, namely
that something (a) is preserved, (b) eliminated, and (c) lifted to a new level.
Matter is dialectical and the dialectic is materialist: The world has a dynamic

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[19] Slavoj Žižek. 2014. *Absolute Recoil. Towards a New Foundation of Dialectical
Materialism*. London: Verso.

material substance that is eternal. Matter exists forever. This substance is not static, but a process-substance that develops through negations of the negation, i.e. the sublation of contradictions so that something at the same time turns into nothing and something different. A contradiction is also called a 'negation' because in a contradiction between A and B, A negates (i.e. opposes) B and B negates A. A and B are opposed to each other. In the negation of the negation, a contradiction is negated, which means that it is opposed and challenged by a transformation that ruptures the contradiction.

In a sublation/negation of the negation, something emerges from something. This something is something different. Since this different being is something, being is preserved. Being continues and returns into itself through change. Change enables the continuity of being, and continuity enables dialectical change. Sublation preserves, eliminates, and produces new qualities. But it is just one dimension of the dialectic that something emerges from something. A new something has new qualities, which means that some aspects of being turn into nothingness. Production is not just the creation of something new (emergence), but also immergence, the disappearance of aspects of the old. This means that in dialectical development being also disappears into nothingness. In the process of being turning into new being, being-there (*Dasein*, = a concrete instance of being) turns into nothingness and not-being-there (*Nicht-daseiendes*), that is, possible being, turns into being-there.

The dialectic of the emergence of novelty and the elimination of the old is accompanied by the realisation of possibilities. Matter is, as Aristotle already stressed, being-in-possibility. The possibility can become actual being, it is not-yet-being (*Noch-Nicht-Sein*). By sublation, possibilities become real, real being-there. But not everything is possible. A human being with a cat's tail, twenty ears, and forty noses is not a real possibility, whereas a human being without a cat's tail and with two ears and one nose is a real possibility. There are spaces of possibilities. Every sublation creates a new space of possibilities that consists of the not-yet-being, of pure possibilities. In the sublation, possibilities that are not-yet reality turn into being-there (*Dasein*). Something must be possible to become actual – something cannot emerge from nothingness: 'nothing comes into being of the things that cannot be'.[20]

The Dialectic as Matter's Fire

Heraclitus lived from around 520 until 460 BC in Ephesus, so around one hundred years before Aristotle (384–322 BC). He was perhaps one of the first dialecticians. Religion is the opposite of the dialectic because it believes in God as matter's unmoved mover, which overlooks matter's capacity to move itself. Domination often mobilises ideology in order to make humans believe that

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[20] Aristotle. 1998. *Metaphysics*. London: Penguin. § 1003 a.

they cannot determine themselves and need determination by others. Domination always contains a religious element. In capitalism, religion is in the form of the commodity and commodity fetishism built into the structures of the economy. Heraclitus says: 'The ordering, the same for all, no god nor man has made, but it ever was and is and will be: fire everliving, kindled in measures and in measures going out'.[21] Heraclitus stresses that matter is eternal and that its eternity and continuity are constituted by its change. The dialectic is a fire that extinguishes and kindles itself. It is an absolute recoil that posits its own presuppositions.[22] The dialectic must burn like a fire so that matter's self-referentiality and self-production is possible, through which something constitutes its own identity and becomes something else so that a new contradictory difference is constituted that makes a difference in the world. The dialectic extinguishes a contradiction and thereby itself. But this extinction is at the same time the dialectic's self-kindling and the ignition of a new dialectical fire, in which the old is sublated and the new constitutes itself as a new contradiction. The dialectic is the absolute recoil by being a fire that continuously extinguishes and kindles itself.

The Dialectic as the Self-Organisation of Matter

Matter is a *causa sui*, the cause of itself. It has the capacity to organise itself and to thereby produce new forms and organisational levels of matter. In every transition from one organisational level of matter to the next one (for instance in the transition from inanimate to animate nature, from animals to humans, from capitalism to socialism, etc.), matter posits its own presupposition, namely the capacity to produce forms of matter and thereby itself.

The human being is a form of matter that has the quality of being conscious of its production of active relations. Humans together constitute and produce society by work and social interaction. Humans are organised at a level of matter that allows them to ask, 'What is the matter in society?'. They possess the capacity to actively reflect on the question of what society looks like, should look like, and how it should be changed. That humans consciously plan society does not mean that they always attain their goals successfully and that they do not make any mistakes. It rather means that humans and thereby also society have the evolving capacity of producing their own freedom and a society that is a realm of freedom from scarcity and a realm of freedom from necessity. Matter is the absolute recoil only through dialectical production as the fire that extinguishes and kindles itself.

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[21] Charles H. Kahn, ed. 1979. *The Art and Thought of Heraclitus. An Edition of the Fragments with Translation and Commentary.* Cambridge: Cambridge University Press. p. 45 (§ XXXVII)
[22] See: Žižek, *Absolute Recoil.*

Consciousness and Reflection

Reflection is a form of consciousness that according to Georg Lukács plays a role in the 'active and productive being of the positing of causal relationships'.[23] In the animal world, the selection of a particular stick or stone as instrument is determined 'with biological necessity'.[24] Therefore, animal consciousness too is determined by nature. In the human world, the selection of a technology is determined by society and entails the reflection on alternative options of action and ways of attaining goals. In the work process, humans make conscious choices between alternatives so that the 'chain of causality'[25] is not constituted automatically, as in nature, but by conscious decisions. In society, development's chain of causality is 'a chain of alternatives'.[26] For example, when a programmer codes software, s/he must consciously decide what algorithms and data structures to use, what programming language is utilised, how comments are built into the code in order to make it readable, etc. In the work process, humans' reflective consciousness enables 'human self-control',[27] 'self-realization', 'self-founded being', and 'social being'.[28]

By saying that 'the production of ideas, of conceptions, of consciousness, is at first directly interwoven with the material activity and the material intercourse of men – the language of real life',[29] Marx expresses that consciousness and communication are not just produced, but have their origin in work. Humans started to talk to each other because they had to say something about how the complexity of production could be organised. And they started to think because the complexity of a world brought about and organised by work made it necessary to denominate certain alternatives, forms, and actions.

The human being's consciousness is 'called into being in work, for work, and by work'.[30] Reality is not photographed into consciousness, but shaped by human goals and 'the social reproduction of life, originally by work'.[31] Consciousness and work are connected and autonomous. Consciousness alone constitutes neither behaviour nor work, but is a foundation of both. Consciousness plays an important role in society because it enables human beings to set goals

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[23] Georg Lukács. 1980. *The Ontology of Social Being. 3: Labour*. London: Merlin. p. 31.

[24] Ibid., p. 31.

[25] Ibid., p. 33.

[26] Ibid., p. 33.

[27] Ibid., p. 45.

[28] Ibid., p. 46.

[29] Karl Marx and Friedrich Engels. 1845/46. *The German Ideology, MECW Volume 5*, p. 36.

[30] Lukács, *The Ontology of Social Being. 3: Labour*, p. 52.

[31] Ibid., p. 27.

and take a 'distanced and critical relationship' to themselves.[32] Activity always has aspects of awareness because humans reflect on the goals, means, and consequences of their practices. The world of ideas and changing the world are not independent, but part of the subject-object-dialectic that shapes work.

Matter and Mind

In materialist philosophy, there is nothing outside of matter because matter is the substance of the world. Speaking of the mind, information, knowledge, thoughts, aesthetics as 'immaterial' or 'non-material' is an indication of a non-materialist philosophy. The implication of such concepts is that either the mind is considered to be the world's substance and phenomena are reduced to the mind or that matter and mind are postulated as the world's two substances. Both assumptions are versions of philosophical idealism.

If something existed outside of matter, then the world would in the first and the last instance not have a sufficient ground. The philosophical Principle of Sufficient Reason says that everything that exists must have a reason/ground/cause. If matter and mind are in the last instance the world's two foundational substances and first principles, then one cannot answer the question of what matter and mind's common ground is. One has to leave this question unanswered or must assume that God created the world out of nothingness. There are two versions of this argument, namely that (a) God as a paranormal being is the ground of the two substances, or that (b) God as the absolute mind created matter. But there is no proof that God exists. Materialism avoids these problems with the insight that the whole world is material and that matter is the process-substance of the world. Matter is its own ground. It has the capacity to organise itself. Complexity theory confirms this insight.[33] Matter's capacity to self-organise is a sufficient ground for explaining the world's existence. Materialism does not need recourse to religion, esotericism, or other external factors in order to explain the world. It is a better explanation of the world than dualism and idealist reductionism – the two versions of idealism in metaphysics. Occam's Razor is a philosophical principle that says that a theory or approach is better than another one if it can provide an explanation based on fewer assumptions. Materialism requires fewer assumptions than dualism and reductionism to explain the world.

A commonly voiced criticism of materialism, also a Marxist materialism, is the claim that it disregards the 'immaterial world', does not grant autonomy to the mind, communication, and the world of symbols, and that it reduces these phenomena to production and matter. This argument overlooks that the world is dynamic: Everything that exists must have come into existence, which means

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[32] Ibid., p. 109.
[33] See: Christian Fuchs. 2003. *Nature, Society, and Thought* 16 (3): 281–313.

that it is a product. The world is not static, but is rather on specific levels of organisation always in movement. If something remains the same, then this is only possible because there is change on underlying levels of organisation. Reproduction requires and reproduces production. Production produces reproduction. Thoughts, symbols, and communication do not simply exist, but have to be produced and reproduced. Communication is not exchange, but the social production of shared meanings through which humans interpret each other, nature, society, and the social, economic, technical, political, and cultural world.

The materialist assumption that matter is process-substance that is its own cause and possesses the capacity for production and self-organisation, enables the dialectical explanation of the mind. The mind is an organisational level of matter that emerged in and in the context of the emergence of the human being and society. There would neither be humans nor the mind without the physical and biological world, on which the human world is built and from which it emerged. At the same time, the mind is different from organic and inorganic nature because the human being is a self-conscious, conscious, goal-oriented, moral, working being that we cannot find in nature.

The human brain produces the mental world of ideas. The mental world needs a physical medium in order to be able to exist. The analysis of how the brain works poses challenges to science. Today, we know from cognitive science and brain science[34] that thoughts are the emergent result of self-referential activity states in the brain's neural networks. A thought is not tangible, but is based on and emerges from the networked activities of the components of the brain, that is, a physical system. That the mind is material means that cognition emerges from the brain's dynamic, networked activities of production. The brain and the rest of the body stand in a dialectical connection. When a living being dies then its cognitive processes that are organised in its brain cease. No religion, esotericism or idealist philosophy is needed to explain the mind.

The Real, the Symbolic, and the Imaginary

One can now object and ask: Aren't dreams, fantasies, ideologies, the characters in a novel, myths, or the idea of God not immaterial because they do not seem to have a correlate and substrate in reality? And is the abstract, formal knowledge of theories, software or mathematics material or real?

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[34] See: Michael R. W. Dawson. 2013. *Mind, Body, World: Foundations of Cognitive Science*. Vancouver: UBC Press. Jay Friedenberg and Gordon Silverman. 2016. *Cognitive Science: An Introduction to the Study of Mind*. Thousand Oaks, CA: Sage. Third edition. José Luiz Bermúdez. 2014. *Cognitive Science: An Introduction to the Science of the Mind*. Cambridge: Cambridge University Press. Second edition.

Just like all ideal phenomena, those just mentioned are material because specific humans or groups live them and express them. Every idea stands in a relation to a subject-matter, it not only has a form, but also content. Every mental content and idea stands in a relation to reality (the real), uses symbols (the symbolic), and has imaginary aspects (the imaginary). For Hegel, being-there (*Dasein*) and reality (*Realität*) are 'being with a *determinacy*' that is immediate and qualitative.[35] Reality is 'no longer merely something inner and subjective', but has 'moved out into being-there'.[36] Reality is an aspect of qualitative being. Something that has no reference to reality is not real being, but imaginary. Reality (*Realität*) and actuality (*Wirklichkeit*) are not the same. For Hegel, actuality is the dialectical unity of essence and existence.[37] Actuality is reasonable being.

A house that someone built is real just like the ideas that the builder or the person living in it has about it. The content of thoughts about how the not-yet built house should look are imaginary (so not real) because they refer to something non-existent. The mental image of the constructed house is imaginary, but nonetheless potentially real insofar as it is physically realisable. A dream about a chocolate house on the imaginary Chocolate Planet is material and exists in a real human subject, but it is imaginary and impossible and therefore lacks potential reality. Such a content of a dream is imaginary, unreal, impossible being. Our ideas can refer to the real, the imaginary, the possible, or the impossible. Thoughts are material and exist in real subjects, but do not always refer to real being, but also to non-real being, imaginations. Non-real being that imagination produces can either be potentially real (thus potential reality) or impossible (an image that cannot become reality). Consciousness is always material and stands in a relation to a real human subject, no matter if it is present in our brain as dream or idea or in externalised form in a book, a play, or a movie. In a certain way, the contents of consciousness always have a relation to reality as well as symbolic and imaginary aspects that depending on the form of consciousness have different roles and valences.

Dreams are about an imagined world, but they are also often symbols of real experiences as well as of conscious and unconscious desires that have a real existence in the human subject. There is a fictive world in a novel that is represented by the symbols in the book and thoughts in the brain that often say something about society's reality in a very indirect manner. Religion is an engagement with metaphysical aspects of reality in society such as origin, death, the meaning of life, the good and the evil (morals, ethics), and the

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[35] Georg Wilhelm Friedrich Hegel. 1830/1991. *The Encyclopaedia Logic (with the Zusätze). Part I of the Encyclopaedia of Philosophical Sciences,* translated by Theodore F. Geraets, Wallis A. Suchting, and Henry S. Harris. Indianapolis, IN: Hackett. § 90.

[36] Ibid., Addition to § 91.

[37] Ibid., § 142.

world's future. Metaphysics is an engagement with phenomena and questions that we cannot immediately experience. It is an aspect of philosophy, but also subject-matter of our everyday thinking. Religion is the answer to humans' real need to find answers to metaphysical questions. Such questions often take on ritual forms as in the symbolic world of prayers, liturgies (ceremonies, rituals, church services), religious texts, pilgrimages, things (images, ritual objects, etc.), and so on. Such symbolic practices and things are dedicated to a purely imaginary world, the world of God, and the afterworld that promises answers to the world's metaphysical questions.

Ideology mostly deals with real political questions of society. Like religions, novels, and dreams, ideology has to a significant degree imaginary aspects. Ideology claims that there is a certain state of the world or that there is a particular solution to problems. However, these claims do not correspond to real conditions and do not pose real solutions. They obfuscate and legitimate domination. In ideologies, there are often scapegoats that are presented and imagined as symbols of societal problems, whose causes are real power relations that are obnubilated. Ideology presents the imaginary as reality.

Abstract theoretical and scientific entities such as a theory or software code refer to reality by describing or modelling aspects of the real world and/or by their use in society. The use of a language constituted by categories or artificial symbols (programming language, mathematical symbols, and formulas) is the symbolic level. Science usually makes the claim to represent reality truthfully. It does not want to provide imaginary presentations of the world, but rather wants to reveal and analyse how the world operates in reality. A computer game, in contrast, often resembles a novel because abstract code is used for portraying a fictive world. Positivist and bourgeois science often plays an ideological role in capitalism by legitimating and fetishising domination. Ideology is the imaginary aspect of bourgeois science. It is often present behind the consciousness of bourgeois science. In contrast, critical science uncovers the ideologies of bourgeois science and bourgeois thought, which constitute the subject matter of critique. Also, critical science has an imaginary component that, however, is non-ideological: It wants to show how society could look if it realised its potentials and abolished domination.

What are the implications of the presented considerations for communication? Communication is a material and real process that produces and reproduces social reality. In the communication process, human being A symbolically interacts with at least one other human being B (or a larger number of human beings), and B interacts symbolically with A. They make meaning of each other and interpret each other's actions. As a result, the humans involved in communication create or change social relations. Communication is the process of the production of sociality. That communication is productive of sociality is just another formulation for saying that humans cannot help but communicate when they encounter other humans. In communication processes, humans transfer interpretations of real and imaginary being and of

possible and impossible being in symbolic forms to other humans, who take such interpretations as the occasion for making certain interpretations of the world that refer to the Real, the Imaginary, the Possible, or the Impossible.

Ideological communication is communication that invents imaginary contents and claims that these contents are not imaginary and real in order to legitimate domination and dominative interests. Ideology critique is an important task of critical communication theory. Progressive politics is a communicative practice that is oriented on turning society's full space of possibilities into realities.

Ideology has effects on consciousness, but does not determine consciousness. By producing and using ideology, humans want to (re)produce false consciousness, which is consciousness that understands the world in a false manner and presents mere appearance as being. Ideologues present false reality, ideas that appear to be real, but are mere appearance. Ideologues aim at creating consciousness, in which the world's essence, actuality, and reality are hidden. Whether they can attain this goal is a question of societal circumstances and social struggles.

2.3. Summary and Conclusions

We can summarise the main conclusions of this chapter as follows:

- Materialism stresses that the whole world is a complex of production, in which matter produces and organises itself and thereby develops. Materialism is opposed to idealist, dualist, and religious worldviews.
- Reductionist forms of materialism reduce the world to single parts and overlook that matter is process-like. The dialectic is opposed to this view. It comprehends matter as process-substance that develops through contradictions and sublations and produces new levels of organisation.
- The mind and human communication do not exist outside of matter, but are aspects of matter's human and societal form of organisation, in which humans create, reproduce, and change society's reality by reflective, self-conscious, social, and communicative action.

Based on the engagement with the concepts of matter and the dialectic that were presented in this chapter, the next chapter poses the question of what the foundations of a materialist theory of society look like.