Chapter 2 Critical Realism and the Morphogenetic Approach

Abstract This chapter argues that that Critical Realism, a philosophy of science, when applied in combination with the morphogenetic approach in historical and social research, can contribute to a deeper understanding of social transformation and help to disentangle the structure–agency relations in the maritime disputes in the South China Sea. The ways in which a society (or a group of people) understands maritime space, adopts practices of demarcating borders, and negotiates disputes, cannot be taken as given. Making them subject to historical and social analysis is both scientifically significant and politically relevant, especially with respect to the role of self-reflexivity in social science research into peaceful transformation.

Keywords Critical Realism • Morphogenetic approach • Social transformation • Structure–agency relations • Self-reflexivity • Maritime disputes

2.1 Clarifying the Meaning of Ontology

Unlike Classical Realism and its tendency to conflate the meanings of ontology and epistemology, Bhaskar (1998a, 2008), the founder of Critical Realism as a school of thought, treats these two entities as distinct. He presents the former as a meta-theoretical argument about what there is in the world to be discovered, and places the latter within the purview of the theory of knowledge when researching how we discover what is out there to be discovered (O'Mahoney/Vincent 2014). With this distinction, a philosophical stand is made, one that recognizes the possibility of engaging in arguments about the existence of social objects without making reference to the way they can be studied.

The stand distinguishes itself from empiricism, a dominant philosophy in contemporary social research approaches that makes a distinction between the observer and the observed, and reduces reality to understanding that which is observable. Observation-based models are used as the basic means for determining the truth or validity of knowledge claims (Kanbur/Shaffer 2007: 185). In the Critical Realism approach, making such a distinction is defined as an epistemic fallacy, a conception of reality restricted to that which is observable, thus treating the observed as a thing-in-itself. Because observation-based models do not take into account the cognitive and social mechanisms by which a given body of knowledge is produced, including those from antecedent knowledge, the theories derived from it have no social rooting. Empiricism is likely to produce what should be treated as raw perceptions.

To take into account the social roots of a given theory of knowledge means rejecting the concept of 'a natural experiment' in the social sciences. The role of the scientists as 'causal agents' must be given attention: they produce a pattern of events through experiments and therefore are always co-responsible for the events. It is possible that they produce a multitude of events, of which the majority in effect have no conceivable significance. Bhaskar (1998a: 10) writes,

What is so special about the patterns they deliberately produce under meticulously controlled conditions in the laboratory is that it enables them to identify the mode of operation of natural structures, mechanisms, or processes which they themselves do not produce.

Following Bhaskar's general epistemological argument, the social sciences can learn from the logics behind experimentation. The purpose of an experiment "was to discover, detect, reveal, or search out something about reality that was not yet known, something that could not be observed without great effort" (Danermark et al. 2002: 20). This particular notion of experimentation presupposes that "the order discovered in nature exists independently of men [sic], i.e. of human activity in general" (Bhaskar 2008: 17).

One of the implications of the findings by the pharmacologist Otto Loewi, a 1939 Nobel Prize winner, is that the operation of chemical mechanisms does exist even if not observed and despite available theories to conceptualize it. Such mechanisms are to be considered as 'intransitive' objects of science; studying them becomes the target of the scientist. Should objects exist independently from scientific activity, an ontological gap exists between these objects and the methodology scientists use to reveal them (Bhaskar 1998a). This gap is referred to as the 'transitive dimension', one compounded by the theoretical artefacts used by scientists to execute their particular activities. Such a dimension is provisional, given that theories derived from such activities remain at best incomplete. Danermark et al. (2002: 23) write: "(S)cience may be wrong at any moment when it makes statements of its object, and so theories in science can only be regarded as the best truth about reality we have for the moment."

If the intransitive domain is taken as what is real, then reality cannot be accessed exclusively by means of observation. Consequently, it becomes necessary to distinguish between the surface appearance of things and their real essence (Harre/Madden 1998). In this line of reasoning, scientific knowledge is 'trans-factual'—meaning to say that the idea behind the possibility of disclosing a particular natural law implies making statements beyond what is derivable from practical experience and experiments (Bhaskar 1998b). The distinction between appearance and presence presupposes a form of explanation that "reflects a real

stratification in the world"—an ontology consisting of specific domains, called the real, the actual and the empirical, and which Bhaskar refers to as a "deep ontology" (Bhaskar 2008: 161).

The study of what is real focuses on the identification of the underlying mechanisms that cause empirical events. The distinction between the empirical and the actual is necessary because the former depends on value/theory-laden observations or perceptions, while the latter refers to events that *do* occur even if a given observer is unaware of them. For example, in Loewi's line of reasoning, common people might be simply unaware of the existence of certain characteristics of the nervous system of the body, including muscular contractions; only people interested in the biology of the human body would potentially be aware of these matters. To put the message differently, most people may be aware of a marine ecology but may not know of the existence of certain characteristics of marine life beyond a certain depth. Only marine biologists with special equipment have potential access to knowledge about marine life in the deep sea—and so far this remains incomplete.

2.2 The Concept of 'Emergence' and the Implications of Living and Knowing in Open Systems

The general notion of an ontology that recognizes the stratified nature of the world of knowledge has important implications for conceptualizing categories such as 'causality' and how researchers may try to discern the constitution of actual events. The differences in the nature of objects that are part of scientific discovery—in both natural and social sciences—imply the need to acknowledge a difference of 'ontological status' between them.

A plausible way to understand this is by introducing the concept of 'emergence'. It is not possible, as has been succinctly put, to "posit the existence of electrons unless they have an effect on material things and that is the way we know them" (Bhaskar/Hartwig 2010: 60). In the case of Loewi's experiment, if he had found a former explanation to the problem of neurotransmission—basically "since one and the same impulse had a different effect on different organs" (Danermark et al. 2002: 19)—the action of a chemical mechanism would have remained undisclosed. Apart from methodological aspects, this implies that actual events can be the result of the action of mechanisms localized in a different stratum from the event in which it is being experienced. In Loewi's case, for instance, his experiment helped him to identify the action of both electric and chemical mechanisms causing muscular contractions and expansions.

The matter of just how and in what ways underlying mechanisms influence the constitution of an actual event remains an issue to be explained. Sayer (2000) suggests that the world is characterized by 'emergence', that is by situations in which the conjunction of two of more features or aspects gives rise to some new phenomena. These features "have properties which are irreducible to those of their constituents, even though the latter are necessary for their existence" (Sayer 2000: 12). Emergence

is, therefore, a relational process in which the interaction between the properties of two elements becomes a component of new elements.

A typical example is the case of water: result of the interaction of oxygen and hydrogen (Willmott 1999; Sayer 2000). The properties of water cannot be narrowed to those of either of its constituents. For example, while water is potable, hydrogen and oxygen remain highly flammable gases down to the temperature at which a biological body does not survive and thus are, by definition, non-potable. Stratification in this case accounts for the fact that both hydrogen and oxygen are located in a different realm from the one of their combination. In this case, water can be considered an event: one in which the process of emergence links the intrinsic and elemental with what becomes actual and empirical through combination. The process of emergence is itself considered reality (Bhaskar 1998a: 111).

Understanding emergence in this way helps to identify differences between the natural and the social world. If we accept the previous arguments about the aim of science and the particular role of experiments, we could argue that the precise purpose of scientific discovery is to disentangle processes of emergence. In the natural sciences, this is quite possible since natural scientists count on methodological tools allowing them to isolate variables and tackle interactions that take place in underlying strata of reality. In Loewi's experiment, the possibility of controlling contextual conditions in a laboratory setting allowed the German scientist to disentangle the process of neurotransmission and capture with some precision the differential action of electric and chemical mechanisms that cause muscular reactions. The latter is arguably unthinkable in a research setting involving human societies: "It is hardly possible to create a social situation where one can systematically manipulate and control the influences from all conceivable social factors" (Danermark et al. 2002: 35).

The recognition of the difference between closed and open systems is important for research. Closed systems resemble the world of natural sciences in which experimentation is plausible. The argument is that, if conditions are kept identical, the interactional processes between certain elements will always lead to identical outcomes. In the case of oxygen and hydrogen, if atmospheric conditions are controlled and replicated, their interactional process will always result in water. This is, however, not the case for the social world, where systems are open and outcomes hardly possible to predict. Social research is mostly concerned with the study of self-reflexive social beings (Lawson 1997, 2003) who are capable of adapting to different circumstances, learning and monitoring their behaviour, but also of affecting their environment as a result of their interaction both with nature and with other self-reflexive beings—as is the case of deforestation or pollution, for example.

The implication for social sciences is twofold. At the conceptual level, the social world should be approached as being constituted by a combination of tendencies and contingencies that will have consequences for the conception of the particular forms of emergence and causality. Regarding the methodological level, should contingency exist, it is difficult to implement social experiments through which to learn about the real. In the social sciences, Critical Realism has to rely on different ways of inferential reasoning, and this has its own methodological problems.

2.3 Linking Critical Realism to the Morphogenetic Approach

When referring to the ontological status of societies, Bhaskar argues that it is possible to extrapolate the general understanding of emergence in physics and other natural sciences by using diachronic explanatory 'reductions', that is "a reconstruction of the historical processes of their formation out of simpler things" (Bhaskar 2011: 89). His own theoretical proposition, the *Transformational Model of Social Activity* (TMSA), uses the notion of history as being the passage of time to theorize about stratified emergence in the social world. Although the theory is incomplete, it can be supplemented with Archer's morphogenetic theory (1995, 1998).

Archer's theory is grounded in Bhaskar's philosophical meta-theory as well as in historical and sociological research. She provides a theoretical basis for the analysis of both continuation and transformation of social structures, built on the following foundational premises: (1) societies are irreducible to people; (2) social forms have an existence before that of people at the time of analysis and, therefore, are an independent object of social inquiry; (3) society's causal powers stand for the realm of the real; and (4) society's causal powers are mediated through human agency. In Archer's morphogenetic approach, causation is presented "as a process which is continuously activity-dependent [and] also one which is uncontrolled, non-teleological, non-homeostatic, non-adaptive and therefore unpredictable" (Archer 1995: 165).

The notion that what has previously existed influences the present does not mean that it determines the course of history. Precisely because the social world is of an open nature, it is characterized by the continuous interaction of self-reflexive individuals with structures of material origin (recourses) and ideational ones (discourses) that precede their existence in the world. Self-reflexive individuals have a certain degree of freedom to either transform structures or reproduce them. One of the important contributions of Archer's account concerns the theorization of the influence of structures on human behaviour (agency) and consequently, the influence of historical legacy on the production of current social events (Knio 2013). Archer recognizes the existence of both tendencies and contingencies in society and acknowledges that the denial of a degree of endurance in social structures would rule out the possibility of social sciences. In her model, tendencies exercised by social actors are to be discerned in vested interests embedded in previously extant social positions. More formally, Archer (1995: 187) notes that, "(A) person occupying a particular role acquires vested interests with it and is both constrained and enabled by its 'dos and don'ts' in conjunction with the penalties and promotions which encourage compliance."

Contingency is thus also derived from the self-reflexivity of individuals who have the potential to modify the configuration of vested interests in a society. To separate a conditioning structure from a self-reflexive agency would lead to conceptual and methodological conflation in three directions, all of which have consequences for interpretation. The first direction (an upward causation) represents the stand taken by theorists who adopt an extreme version of 'methodological individualism'. This stand accepts society as an aggregation of individuals, but explains human agency primarily in terms of voluntarism and/or perceptivity. The second direction (a downward causation) represents the stand commonly found among theorists of structuralism, according to which individuals do no more than act out the imperatives of social norms—thus reducing reality to structures. The third direction (a central conflation) does provide a more comprehensive account of the relationship between agents and structures but treats them as inseparable, thus limiting the possibility of examining agents and structures in their own terms.

Archer (1995: 187) criticizes Giddens' theory (1984) (labelled 'structuration') for such central methodological conflation. This theory does speak of structure but only of its constraining and/or enabling character, not in terms of motivational aspects. According to her, the central conflation severs human motivation from a prior distribution of interests vested in social positions that antedate their holders. The idea that interests are built into positions by the relationship of that position to others would mean giving structures a status independent of the social practices held to be constitutive of it.

The debate on methodological conflation can be illustrated by providing an example derived from Wilmot's (2002: 11) analysis of a democratic election. He presents voting as an event conditioned by "internal social relations between positions (voter/local government official; local government official/central government official)". One can think of a voter as a social actor (a citizen) who, in a given context (where liberal ideas flourish), has vested interests (avoiding the rise of an authoritarian regime) that direct them to form a preference by which they cast their vote.

An interpretation based on Archer's classification of 'conflation' would lead to the following lines of argument. An 'upward conflation' would conceive these interests as socially constructed (based on individual perceptions) and hence would give little attention to the fact that 'vested interests' act as real tendencies created in a (liberal) regime existing before the one in which a current election is taking place. An interpretation based on 'downward conflation' would simply consider the voting system as a structure that restricts or enforces voting in particular ways. With this approach, it would be enough to study incentives swamped by the operation of structures made to anticipate voting behaviour. Finally, an interpretation based on a 'central conflation', despite its recognition of both electoral-associated structures and potential voters as independent entities, would nevertheless be inclined towards a position that sees the existence of structures in Giddens's terms (1984: 17). His position considers structures as 'instantiation', that is, as something only to be found in instances in which rules and resources are actually being employedrelying on memories orienting the conduct of knowledgeable human agents. This notion of a structure is problematic because it simplifies human agency and denies durability or the stability of social practices, ideas and systems.

2.3.1 The Morphogenetic Approach in Succinct Terms

The morphogenetic approach maintains that an understanding of time and space is needed to explain the interactions between human agency and social structures. This places emphasis on historical and situated understanding of social processes that takes cognisance of the transformation of structure in a larger time frame. In other words, social structure changes episodically as a result of activities and choices made by actors within their situated environment.

In her analytical model, Archer decouples the category of 'society' into two components—material and ideational—which she calls '*Structural Emergent Properties*' (SEP, material) and '*Cultural Emergent Properties*' (CEP, ideational). In relation to people, Archer advocates a more fully-layered view of human beings which resists the bundling of 'individuals', 'agents' and 'actors' into a single entity. Accordingly, she highlights the temporal metamorphosis of these categories under the rubric of what she calls '*People's Emergent Properties*' (PEP).

Agents, Archer suggests, are collectivities that share the same life chances; and she uses 'agency' to denote relationships between these collectivities plus the processes of their grouping and regrouping. Relationships and regrouping inform their positioning vis-à-vis the distribution of resources and the division of labour that circumscribe and shapes everyday practices. 'Actors' is the term she uses for the individuals whose social identities, values, interests, and characters are 'forged' from agential collectivities in relation to an array of organizational roles available in society at the specific point in time. Both agents and actors, however, remain anchored in persons, for neither are constructs or heuristic devices; they concern real people even though they only deal with certain ways of being in society, and not with all the ways of being human in the world (Archer 1995: 280).

Taking into account these considerations, Archer maintains that social forms (structure and culture or SEP and CEP respectively) exist prior to social action (agency), and hence are located in different temporal domains. Structures and cultures shape and condition social action, yet agents and actors are not mere puppets or social automatons in this respect. They are conscious, self-reflexive, and may attempt to transform their own surroundings. Whether they are able to transform or reproduce a particular existing order depends on the detailed intersection between structure, culture and agency over time.

Archer identifies three analytical moments that should be seen as a cycle consisting of a 'feedback loop', which is embedded in a particular temporality: structural conditioning \rightarrow social interaction \rightarrow structural elaboration/reproduction. The conditioning phase corresponds to the domain of the 'real' in Critical Realism. It refers to the relations within a structure (SEP) necessary for binding structures and cultures to people. These internal relations in this stage are material par excellence (whether they are physical or human), implying the prevalence of 'practice' as an activity linking people with particular objectives (Archer 1995: 176–177).

Bureaucracy is a helpful example as an object of investigation. The necessary internal relations in this case are not the constituent factors of a bureaucracy per se (financial, organizational, technological and human resource structures), but the relations allowing these factors to exist in the first place; the anterior generative mechanisms that have made them as they are. In this regard, the major guiding questions that can reveal the conditioning moment of a bureaucracy could be: what allows a bureaucracy to generate particular funds and what makes it adopt a particular hierarchy (Sayer 2000: 10–17)?

Internal relations underlying the Cultural Emergent Properties (CEP) refer to the realm of ideas, their properties and meanings (Archer 1995: 181). Taking the example of bureaucracy again, CEP assumes 'bureaucracy' to be a concept in its own right, independent from interpretations potentially given to it—whether or not bureaucracies are modern structures, conducive to capitalism, efficient/obstructionist, progressive/conservative, inclusive/exclusive, and so on. Both structural and cultural conditionings imply that the category of 'persons' (in a bureaucracy) is to be analytically embedded in a whole range of different collectivities.

Social interaction, the second moment, may be conceptualized as the relationship between two of the three specified emergent properties (Structural, Cultural and People's) at a given analytical moment. Archer suggests four situational logics that underlie structural, cultural, and, more importantly, structural–cultural interactions as illustrated in Fig. 2.1.

This figure shows four situational logics of structural–cultural interaction. Interactions can be complementary or incompatible, depending on 'necessity' and 'contingency'. For example, the logic of protection can apply when there is necessity and complementarity, or a harmony between the material and ideational components. Continuity, not change, is to be expected from this particular context. The logic of compromise applies to the incompatibility of necessary structural–cultural interactions where the initial will to defect is not strong enough to materialize. In cultural terms, this takes the form of syncretism between various theories, beliefs and values, indicating furthermore the containment of different vested interests in structural domains.

The logic of opportunism refers to situations in which material diversification (for example, the diversification of production) or cultural specialization (for example, the rise of particular schools of thought) allows certain groups to benefit from this context and yet to seriously challenge the existing order. The logic of elimination (or competition) signifies the readiness of certain groups to nullify the opposition and completely change the system. The material rise of industrial capital

	Necessary	Contingent
Complementary	Logic of Protection	Logic of Opportunism
Incompatible	Logic of Compromise	Logic of Elimination

Fig. 2.1 Structural-cultural interactions. Source Knio (2013)

with the concomitant ideational challenge it posited towards the aristocracy is a clear example of the latter situational logic.

Both types of structural-cultural interactions are to be treated as being mediated agency. The relation of given *People's Emergent Properties* (PEP) to others, and to both Structural Emergent Properties and Cultural Emergent Properties is referred to as the second order emergence of PEP: the concept of "double morphogenesis of agency". This concept captures a reality where

(C)ollectivities of human beings are grouped and regrouped as they contribute to the process of reproducing or changing the structure or culture of society. In this way they also maintain or change their collective identities as part and parcel of maintaining or transforming the socio-cultural structures which they inherit at birth (Archer 1995: 225).

Two analytical moments follow from this process. First, the double morphogenesis of agency defines the initial formation of vested interests in society. These interests are essentially shaped and nurtured through previous rounds of conditioning, and reshaped by virtue of complex structural, cultural and agential interactions. Second, and building on the previous point, Archer distinguishes at this stage between two different types of emerging collectivities: primary agents and corporate agents. The latter have a clear articulation and organization of their interests (interest groups, lobby groups, defensive associations); the former do not visibly express their intentions nor organize strategic pursuit of them (Archer 1995: 258–259). While these two types are not necessarily fixed in time—a primary agent in one time can be a corporate one in another—the changes in their positioning indicate whether agents are likely either to reproduce or to transform an existing order.

A third analytical moment which relates structure, culture and people over time aims to discern the conditions under which social actors representing agents contribute towards the reproduction (morphostasis) or the transformation (morphogenesis) of the existing system. Archer (1995: 308–324) accordingly sets out another quartet of propositions for logical possibility:

- 1. Conjunction between structural and cultural morphostasis.
- 2. Conjunction between structural and cultural morphogenesis.
- 3. Disjunction between structural morphostasis and cultural morphogenesis.
- 4. Disjunction between structural morphogenesis and cultural morphostasis.

Structural–cultural morphostasis conjunction refers to the prevalence of necessary internal relations (complementary or incompatible) under given contingent considerations. It gives primacy to the logics of protection and compromise. In contrast, structural–cultural morphogenesis conjunction refers to the prevalence of contingent relations (complementary or incompatible) over the necessary internal relations, thus giving primacy to the logics of opportunism or elimination (Archer 1995: 302–308).

The first two propositions seem straightforward. The first proposition leads towards a visible continuity of the system as no change is possible; the second one leads to a complete change. The third and fourth propositions are more complex and require detailed analysis of the situational logics surrounding them. For example, the third proposition implies the beginning of an ideational shift which potentially stimulates a slow-paced process of social regrouping; the fourth proposition suggests the rise of a multitude of material interest groups—each becoming more ideationally articulate (Archer 1995: 315–317).

The key variables in explaining morphostasis and morphogenesis in conjunction with the situational logics embedded in them are the quantitative and qualitative nature of corporate as opposed to primary agents' interventions. Without collapsing structures into cultures and peoples, Archer links the genesis of vested interests in society to the mechanics of power and exchange among agents in a non-deterministic way. It then should be noted that the results of each analytical moment envisaged—morphostasis or morphogenesis—feed into the conditioning stage of the next temporal cycle, in an ongoing process of studying transformation (Archer 1995: 337).

2.3.2 The Concept of 'Interests' in the Morphogenetic Approach

Building on what has been presented so far, the concept of 'interests' in *Critical Realism* (CR), and consequently in the *morphogenetic approach* (MA) differs greatly from the usages and meanings deployed in liberal, realist and social constructivist theories. 'Interests' in CR/MA are neither given prior to any research nor purely imagined. In other words, they can neither be simply read off from certain material/geostrategic and structural positions, nor they can represent a complete subjectivist exercise based on individuals' perceptions and feelings. Instead, in CR/MA, they are dialectical and configurative in the sense that they are regarded as compositional as well as imagined, independent yet dependent on the mind, subjective as well as objective, relative as well as relational. More precisely, interests in this tradition are treated as having diachronic emergent properties—relating to historical time.

Therefore, the act of analytically placing individuals within a multitude of institutions and collectivities implies the recognition of the contingent juxtaposition of various structural and cultural contexts, and the necessary mechanisms that tie these structural and cultural contexts together. In other words, an interest may be treated as being formed by the juxtaposition of structural and cultural conditions, yet it is also contingent on the researcher's subjective readings of their environment. Nonetheless, viewing the conditioning of these structural and cultural contexts as always necessary and not contingent on something else means to treat them analytically as 'objective'.¹

¹In Critical Realism, the word 'objective' refers to the intransitive dimension of knowledge. It does not mean 'true' or 'independent of' (Sayer 1992).

Human beings are always part of an open complex system. To grasp the meaning of a particular 'interest', it is necessary to envisage different cycles. In cycle 2 of the morphogenetic approach, interest is regarded as something that always interacts with many elements derived from different sources—ideas, cultures, and structure. Therefore, its formation bears contingent or necessary elements, compatible or contradictory relations. In cycle 3, people as actors reflect upon the passage from the conditioning of interests towards the interaction with other structures, cultures, roles and positions through mechanisms of either reproduction or elaboration. These mechanisms of meaning-making may be referred to in terms of the diachronic and transient nature of interests.

Applying the morphogenetic approach to the contemporary context of the sea south of China's land border, the elements of time and space require further analysis and elaboration in order to explain how interactions between human agency and social structures have produced situated understandings of this sea's belonging to a wider geological reality. Firstly, the historical function and use of this maritime area, as well as the regulation of use and movement, had been transformed within a large time frame prior to its identification as the 'South China Sea'. Secondly, activities and choices made by users of this sea area have been guided by minds that are historically and contextually embedded. They have promoted episodic changes regarding self-identification in relation to it. Thirdly, the current body of regulation (UNCLOS) is nested in a Westphalian mindset of the nation state as a unit in the 'international community'-a flat vision that does not accord sufficient attention to the deeper layers of formation and composition of interests which existed prior to the arrival of these notions. Contemporary conflicts may thus be analytically treated as products of the transformation of both social relations and the technologies of 'knowing' and 'claiming' a given geographical space as a nation's geo-body. Such geo-bodies reproduce themselves to subsume people under their regime by requiring allegiance (Winichakul 1994).

In this respect, to use CR/MA's concept of interest for the analysis of contemporary disputes, three key concepts that underpin UNCLOS's principles of defining maritime boundaries—namely equity, proportionality, historical use—need to be examined as being contingent on the prevalent structure of power, bearing in mind the implications this has on the construction of the meanings of cooperation. The concept of 'interest', expressed by China as a 'core interest', needs to be placed in the appropriate temporal frame to discern which aspects are enduring or transient, as well as the conditions that shape a form of self-reflexivity when expressing an interest in altering norms and rules. A critical assessment of the 'interests' behind contemporary practices upon the South China Sea that lead to maritime conflicts is important not only for academic purposes but also for reflection on the different scenarios for the transformation of conflict and their viability.