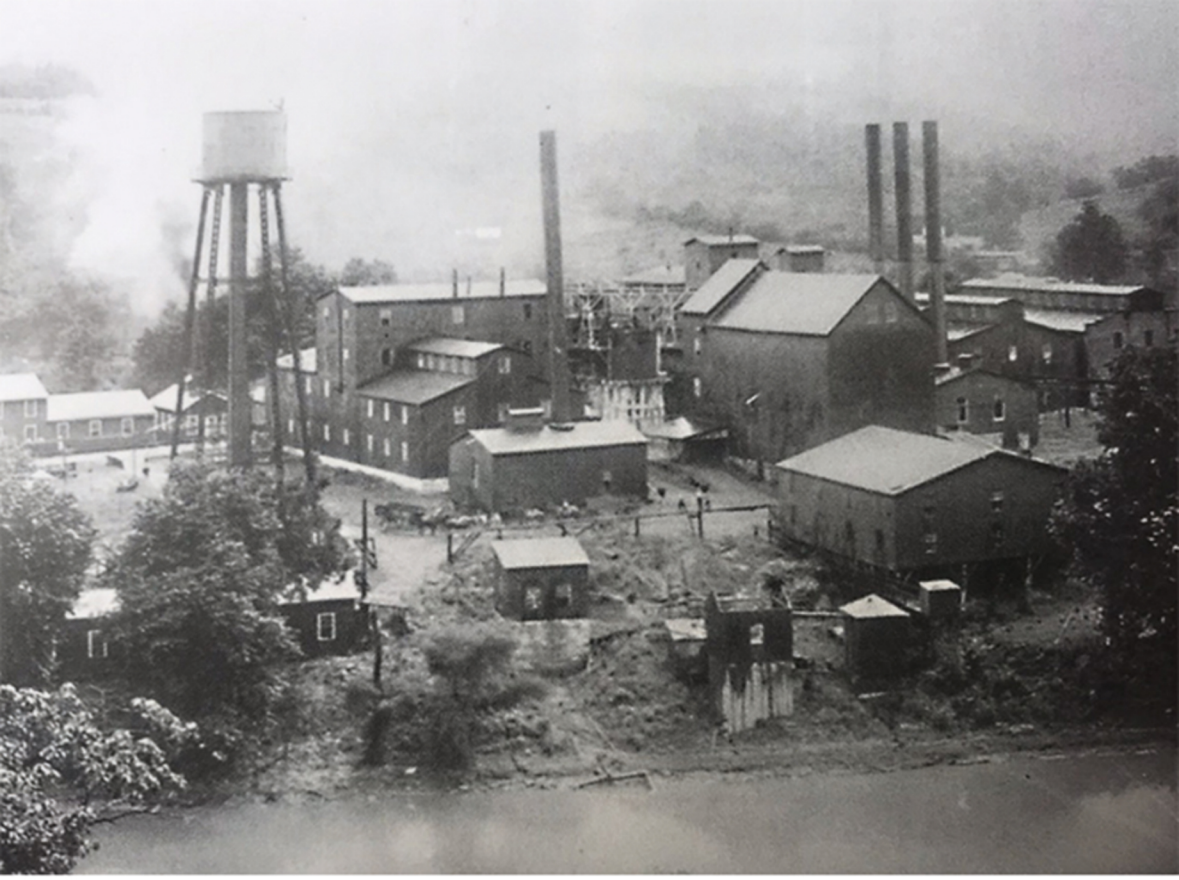

ROUTLEDGE STUDIES IN SOCIAL AND POLITICAL THOUGHT

SOCIAL CHANGE IN A MATERIAL WORLD

THEODORE R. SCHATZKI

ROUTLEDGE

SOCIAL CHANGE IN A MATERIAL WORLD

Social Change in a Material World offers a new, practice theoretical account of social change and its explanation. Extending the author's earlier account of social life, and drawing on general ideas about events, processes, and change, the book conceptualizes social changes as configurations of significant differences in bundles of practices and material arrangements. Illustrated with examples from the history of bourbon distillation and the formation and evolution of digitally-mediated associations in contemporary life, the book argues that chains of activity combine with material events and processes to cause social changes. The book thereby stresses the significance of the material dimension of society for the constitution, determination, and explanation of social phenomena, as well as the types of space needed to understand them. The book also challenges the explanatory significance of such key phenomena as power, dependence, relations, mechanisms, and individual behavior. As such, it will appeal to sociologists, geographers, organization studies scholars, and others interested in social life and social change.

Theodore R. Schatzki is Professor of Geography, and of Philosophy and Sociology, at the University of Kentucky, USA. He is the author of *Social Practices, The Site of the Social, Martin Heidegger: Theorist of Space*, and *The Timespace of Human Activity*. He is also co-editor of, among other works, *The Practice Turn in Contemporary Theory*, *The Nexus of Practices*, and *Questions of Practice in Philosophy and Social Theory*.

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For my family

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THE PRACTICE PLENUM

This book approaches the topics of conceptualizing and explaining social change through a practice theoretical account of social life and the constitution of social phenomena. The present chapter lays out basic features of this account. In elucidating the constitution of social phenomena, it prepares the way for the analysis in chapter four of what social changes—that is, changes in social phenomena—are. It thereby provides an essential piece of the conceptual structure elaborated in this book. Note that, although this chapter explores topics addressed in earlier works of mine, it offers new ideas on these topics and takes earlier discussions in new directions.

In Schatzki (2002), I argued that bundles of practices and material arrangements form "sites" of the social. Sites are where certain entities exist or occur, in a rarified sense of "where." Two familiar senses of where an entity is or occurs are, first, its location in space or in some broader (spatial, actional, or historical) phenomenon and, second, this space or broader phenomenon (context) where it is located. Video sharing, for example, takes place (1) at specific locations such as park benches and living room couches as well as at specific moments over the past two decades and (2) in parks, in houses, in physical space, and during the past two decades. Sites are a special type of broader phenomenon, or context, where something can exist or take place. For an entity to exist or occur in a site is for it to inherently exist or occur as part of some broader phenomenon. When this situation obtains, the broader phenomenon involved is the site of the entity in question. In this sense, absolute space—if it exists—is the site of spatial locations, and history can be conceptualized as the site of human actions. In the aforecited book, moreover, I interpreted the adjective "social" to mean pertaining to human coexistence. This interpretation opposes ones that construe "social" as pertaining to joint commitment (Gilbert 1989) or pertaining to fellowship/companionship (the meaning of *socius*). I suggested, further, that coexistence be

understood as the hanging-together (*Zusammenhang*) of people's lives. These conceptual moves set up the argument that social life, the hanging-together of lives, inherently transpires as part of bundles of practices and arrangements. Such bundles form sites of the social: all social life transpires as part of them.

According to this picture, bundles of practices and arrangements are the central unit of conceptuality in analyses of social life and social phenomena. I write "unit of conceptuality" instead of "unit of analysis" because, although the concept of bundle is central to such analyses, bundles as such are not necessarily their central focus. Bundles, moreover, connect, and the broader constellations they form link to form one overall complex. I call this complex the "practice plenum." The choice of the term "plenum" is deliberate. A plenum is a sum of particular things, which might or might not relate, that, as a sum of particular things, amounts, not to a bigger thing, but simply to a multiplicity. The practice plenum is a plentitude in this sense: an entirety of practices and arrangements, which happen to relate and, as related, form bundles and constellations.

Social life inherently transpires as part of bundles of practices and arrangements. Together, moreover, these bundles form a plenum. It follows that social phenomena are aspects or slices of this plenum. The components of the practice plenum, consequently, are the materials of which social phenomena are composed. What's more, this plenum, like its constituent bundles and constellations, is nothing more than the practices, arrangements, and relations that compose it. As a result, the key components of the plenum, the basic materials of which social phenomena are composed, are practices, arrangements, the relations that link practices and arrangements into bundles, and the relations among bundles that link them into broader constellations.

Practices

All theories of practice construe practices as organized actions. They disagree about how actions and their organization are analyzed. Bourdieu, for instance, made habitus—which he interpreted as batteries of dispositions—central to his account of practices, that is, actions. He also emphasized that social spaces, understood as position-defining multidimensional distributions of capital (fields are a prominent type of social space; see Wacquant and Akçaoğlu 2017), organize practices in given domains. More specifically, relations among, that is, the relative locations of, positions in social spaces define actual relations between people who occupy these positions, thereby structuring what these people do and how they interact in those spaces (e.g., Bourdieu 1968, 1998b, 2005). Bourdieu, in addition, held that such matters as stakes, strategies, and the layouts of material settings both depend on social spaces and contribute to the organization and evolution of practices in particular domains.

Shove, Pantzar, and Watson (2012), meanwhile, write relatively little about actions per se. They focus, instead, on practices. Following Reckwitz 2002, they analyze a practice as a block of elements that is brought together in the

performance of action. The elements involved are of three types: competences, meanings, and materials. The practice of car driving, for example, brings together such competences as knowing how to start the car, how to steer it, and how to anticipate other drivers' actions; such meanings as Stop!, need gas, and driving as an expression of freedom; and such materials as cars, keys, roads, signs, gasoline, and human bodies. Driving practices vary geographically as different blocks of such elements. Such practices also evolve (i.e., the mix of elements changes) as well as develop from earlier transportation practices, for example, those of carriage driving: the latter's blocks of elements, though different from the blocks that compose driving practices, partly overlap with them, especially during the transition, for example, roads, carriage-car design, travelling on a particular side of the road, hand signals, changing wheels, and other repair skills. For Shove, Pantzar, and Watson, actions, that is, practices as performances, draw together meanings, competences, and materials and, in so doing, reproduce practices qua entities composed of blocks of such elements.

On my account, practices are open-ended, spatial-temporal sets of organized doings and sayings. A doing is always a doing of something. In more conventional terms: a doing is the performing of an action. Performings, moreover, are events, things that happen. Note that I will sometimes use the word "activity" as equivalent to performings, thus to denote the event of doing. This usage entails that activity and action are distinguished as event and achievement (see Schatzki 2010: xiv–xv). Sayings, meanwhile, are a type of doing, namely, doings in which something is said. The idea of saying something, however, is ambiguous. What a person says in saying something is, first, the words, sentences, and strings of words, phrases, and sentences she utters (or writes or types). These words and sentences, as vocables, are texts. They are texts, of course, that usually perish in the event. What a person says in saying something is, second, what she says. If someone says (or write or types), "The evening is cool" or "Hand me my cell phone," what she says in this second sense is that the evening is cool or to bring her the phone. Incidentally, the point of distinguishing the wider set of doings from the subset of doings composed of sayings (see the criticism at Hirschauer 2016: 54–5) is to highlight sayings as a component of practices and social life and thereby facilitate examination of the different contributions of and issues that attend nondiscursive and discursive doings (see Schatzki 2017d; "nondiscursive doings and discursive doings" is an alternative formulation of "doings and sayings").

Practices are open sets of activities. Openness means that any practice can in principle be extended through the occurrence of additional performances that compose it. Cooking practices, for example, are open since additional cooking actions can always in principle be performed. The openness of practices has implications for what it is for a practice to persist. A practice persists whenever an additional practice-composing action is performed. Whenever such an action is performed, it turns out that the practice had persisted from the time of the previous practice-composing action to the time of this one. In the future,

consequently, a current practice will persist only if further practice-composing actions occur; and with each such occurrence the practice will turn out to have persisted from the time of the previous such activity. Note that persistence does not require constituent activities continuously to occur. The doings and sayings that compose a practice can be and usually are spread out in time and space, i.e., are separated by temporal and spatial gaps (a practice, consequently, is not a Rescherian or Bergsonian process). Accordingly, it is enough in order for a practice, in the future, to have persisted that *at some time* in the future a constituent activity occurs. There is no rule, however, concerning how short this time must be or how long it cannot be. For example, the ancient practice of communicating by smoke signal has largely died away, at least in the North Atlantic region. But it will persist so long as people communicate this way every so often. There is no rule, however, how quickly these occurrences must follow one another (nor how frequent they must be) for the practice to persist; correlatively, there is no rule about how long a time period must pass before the practice qualifies as having died. Practices are open, and it is possible that people will communicate this way in the future (think Mad Max).

Another implication of the open nature of practices is that, unless an action that constitutes a practice is performed at a given moment, it is indeterminate at that moment whether the practice persists. This is easy to see vis-à-vis smoke signals: during recent periods when no inhabitant of the North Atlantic region communicated in this way, it was perpetually indeterminate whether another occasion of such communication would occur. Indeed, it is still presently indeterminate. This same indeterminacy, however, affixes all practices, even those such as cooking practices that are today widely carried on; or, to speak from the vantage of the present moment (when you are reading this sentence), even those that people have been widely carrying on in the very recent past. For until a new constituent activity actually occurs, it remains indeterminate whether one will occur, however likely this might seem. The lack of a rule about how long the absence of new constituent activities must continue before it is sensible to proclaim the practice dead is grounded in this indeterminacy: for the persistence of the practice remains indeterminate regardless of the length of time that has elapsed since the last persistence-authenticating activity. It is possible that someone in the North Atlantic region could resurrect the practice of communicating by smoke signal. But at what point will it be true to say that this is no longer possible? It no longer seems possible that people will take up the use of cuneiform languages again. But might people begin speaking Latin again? Can one think of circumstances under which this would be imaginable? So, what about writing in cuneiform languages? There are no definitive answers to such questions: the persistence of open-ended sets of doings and sayings is inherently indeterminate.

Practices, moreover, are intrinsically spatial-temporal. This is because their constituent activities take place in or over time and at particular locations or along particular lines in space. Activities take time, that is, occur over a duration of it. The myriad of activities that compose the practice of texting, for instance,

occupy varying short amounts of time as they occur over the course of the twenty-four hour day. I am not sure whether any action performances occur at an instant. The reason, moreover, that activities take place at particular locations or along particular lines in space is that activities involve the performance of bodily actions, which are necessarily localized where bodies are located: at particular locations in or along particular paths through space (bodies themselves define such paths). Texting, for instance, takes place at all the locations where a person types or reads text messages on her phone: these are the locations occupied by her body and its moving hands, fingers, and head as she performs the bodily actions that compose the typing or reading of texts. I will return to the topic of the spatial location of activities when exploring materiality in chapter three.

As noted, practices are not just sets of activities. They are sets of organized activities. According to Bourdieu, practices, that is, practices in a particular social space, are organized by the distributions of capital that define positions and objective relations between positions in that space; by the common ends (stakes) people pursue there; and by group habituses, which are what the habituses of people who occupy a particular position in that space owe to the same or similar conditions they have experienced (Bourdieu 1990b: 60). Shove, Pantzar, and Watson, meanwhile, hold that practices are organized by blocks of meanings, competences, and materials. On my account, finally, practices are organized by
= pools of understandings, rules, and teleoaffectivities. The relevant sorts of understandings are two. The first comprises
1. practical understandings, which are understandings how to carry out particular intentional actions in particular circumstances through performances of bodily actions. Examples are understanding waving as a way to greet a friend across the street or understanding tapping on a screen in certain places in a certain sequence as a way of sending greetings to someone on another continent. Such understandings also inform people's
2. perceptions of what other people are doing. The second sort of understanding embraces general understandings, which are ethoses or general senses of things, for instance, of Shaker work as sanctification of the earthly sphere of existence (Schatzki 2002), of the authenticity of places and products (Welch and Warde 2017), of the venerableness of Kentucky bourbon, and of a particular virtual community as an electronic realization of transformative community. General understandings such as these imbue particular practices in the sense of being expressed in many of their constituent activities. Such understandings can also suffuse the different practices and bundles that compose given constellations.

Rules are formulated directives, instructions, or remonstrations. They are uttered by people—not just those in positions of authority—and formulated in texts, including children's books, government documents, rulebooks, and signs. Unformulated rules will not be treated as rules in the following despite the diverse philosophical and social theoretical analyses that construe them as such (for reasons why, see Schatzki 1997). Rules qua formulations are an important determinant of action in Bourdieu's theory of practice (see Bourdieu 1990b: chapt. 4). They, together with habitus, determine the spontaneous behaviors through

which people cope with most contingencies in life. According to Bourdieu, rational thought comes into play only when rules and the automatic operations of habitus are inadequate to situations and thinking must intervene (Bourdieu and Wacquant 1992: 131)

Human action, furthermore, is almost always teleological, that is, performed for the sake of some way of being or state of affairs. This is true of actions that are ritualistic or ceremonial in character as well as most actions that are determined by emotion (see Schatzki 2010: chapt. 3). Often, moreover, an action that a person performs for the sake of something is part of some complex of actions—a task or project—that she pursues for the sake of that end. Someone, for instance, might text or call a friend as part of the task of calming him down, which she pursues for the sake of maintaining the cohesiveness of their circle of friends. In texting or calling, she is also seeking to calm him and to maintain the circle—and if she succeeds, then in texting she was also calming him down and maintaining the circle. A salesperson, furthermore, might sweet-talk a liquor wholesaler as part of the task of winning a contract, which she pursues toward the end of beating her yearly sales minimum. In sweet-talking him, she is also seeking to win the contract and to beat her minimum. The teleoaffective structure of a practice embraces all those end-project-action combinations that are either prescribed or acceptable in the practice. Only certain ends, for instance, can be acceptably pursued in the communication practices that texting is part of; embarrassing friends, for instance, does not number among them. Ditto for the sales practices that the salesperson's sweet-talking is part of. What people can do acceptably or as prescribed for the sake of particular prescribed or acceptable ends is also delimited. In all practices, moreover, the lines between acceptable and unacceptable and between prescribed and not prescribed are to some extent indefinite and also subject to disputation among participants in the practice. Emotions, too, can be normativized. The expression of certain emotions can be prescribed or acceptable in practices. An example is expressing delight over the successful audition of an Instagram buddy. The emotional dimension of the teleoaffective structure of most practices is considerably thinner than its teleological counterpart.

An activity, that is, the performing of an action, is an event: in it, an action takes place. A practice, consequently, embraces an array of such events. Because these activity-events can overlap or be successive, a practice transpires at an array of possibly overlapping moments and periods of time. The actions that compose a practice are also performed by multiple individuals. Philosophers once debated whether it is possible for a single person to carry on a practice, but the practices conceptualized in theories of social practice are invariably carried on by many people. In fact, an indefinite number of people can in principle carry out a given practice even when being a participant is strictly regulated, e.g., as in monastic, military, legal, or educational practices. Finally, for different activities to be part of a given practice is for them to express elements of that practice's organization: these activities realize common practical and general understandings, uphold certain rules, or instantiate the practice's normativized teleoaffective structure.

Understandings, rules, and teleoaffective structure also hang together and can refer to one another, thereby forming arrays other than by being expressed in people's behavior. Particular general understandings, for instance, might hang together with particular ends, and rules might refer to the contents of general understandings and ends. These connections come out when people reflect on, formulate, and argue about the understandings, rules, and teleoaffectivities that do or should govern their lives.

The doings and sayings that compose practices are events. This is not true of what organizes practices. The realization or observance of organizing elements are features of activities and, thus, of particular events. But organizations as such, and their elements qua organizing elements, are not events. For instance, the rule, Quiet Please, in a talk-free compartment of a train is not an event, though observing the rule is a feature of the activity-event of leaving off talking whenever a passenger does not talk there because of the rule. Nor is the organization of distillation practices a feature of any one, any subset of, or even all the actions whose performances compose these practices. The complex of understandings, rules, and teleoaffectivities that organizes these practices does not happen. Rather, it exists. Practice organizations, consequently, are not processes: their components are not events, developments, or advances, let alone continuously happening ones.

What organizes practices instead form structures. These are not, however, != structures of the sort conceptualized in traditional French structuralist anthropology and social theory, namely, abstract systems of elements and relations that lie outside time and space and govern action and social phenomena without working through people's minds and cognitive capacities. This conception of structure dates to Ferdinand de Saussure's (1959) idea of la langue as an abstract, closed, and autonomous system of elements (defined internally through differences) that governs spatial-temporal events of speaking and writing (la parole). The idea of abstract structures that govern spatial-temporal events subsequently spread in the social disciplines via Claude Lévi-Strauss' (1966) conception of the underlying synchronic structure of communication systems, Louis Althusser's (1969) notion of the mode of production, Jean Piaget's (1970) theory of the genetic stages of knowledge, and Michel Foucault's (1970) account of epistemes. One of the great weaknesses of this general conception of structure has been the difficulty of explaining how abstract structures actually govern activity. Of the just mentioned theorists, Lévi-Strauss offered perhaps the most ingenious solution, postulating that the underlying structures of communication systems are homologous with one another and rooted in the logical properties of brain operations. Since his lifetime, however, the rapid development of neuroscientific understandings of brain organization and operations have undermined this stunning conjecture.

Nor are practice organizations structures of the sort invoked in certain forms != of neo-structuralist thought, namely, abstract structures that govern activity and practices by working through people's mental and cognitive conditions. Anthony

Giddens (1979), for example, holds that the structures of practices, which he analyses as sets of rules and resources, lie outside space-time. These structures, however, are also contained in practical consciousness: in memory traces and in the recursive mobilization of memory. This claim exemplifies the idea that what organizes practices is embedded in mental/cognitive conditions. According to his account, moreover, the practical consciousness in which the organization of practices is embedded is responsible for all activities of a routine nature. Other theorists of practice have likewise promulgated conceptions of a practical understanding that is responsible for most human activity, for example, habitus in Bourdieu and skills in Hubert Dreyfus. Bourdieu also toyed with the Giddens-like idea that structures of social life are embedded in practical understanding qua habitus. In his earlier theoretical work, he claimed that the structure of habitus is homologous with the structures of social spaces and the layouts of settings. This earlier work also argued that habitus is governed by elements and principles that can be articulated in a practical logic (1976, 1990b). At some point, however, Bourdieu seems to have abandoned, or at least de-emphasized, the idea of practical logic (it mostly disappears from his work), and the thesis that habitus is structured homologously with objective conditions vanishes along, or at least coincident, with the de-emphasis of this logic. Indeed, in Bourdieu's later work habitus evolves into batteries of dispositions that are merely correlated with position in social space instead of structured homologously with such spaces.

My account does not follow Giddens (or early Bourdieu) in embedding what organizes practices in practical understanding. Practical understanding is simply knowing how to bodily carry out intentional actions in particular circumstances (i.e., through particular bodily actions). The remainder of what organizes practices—rules, general understandings, teleoaffective structure—is not contained there. These items are, instead, matters that people grasp, are aware of, or are familiar with. People know of and are familiar with the rules cited in their practices, the general understandings that imbue proceedings, and the ends, projects, actions, and emotions that are acceptable or prescribed there. If, moreover, they are unsure of these matters, they can ask and discuss as well as dispute with others about what does or should organize their practices.

As I conceive of the matter, what organizes practices does not form abstract structures of the traditional French structuralist or more recent neo-structuralist sorts. I just noted, moreover, that practice organizations make a difference to human activity by virtue of participants grasping or knowing them. In this way, the organizations of practices bear some resemblance to the sorts of structures postulated in cognitive linguistics, which embraces rules and principles that govern action by being embedded in cognition. But there are two significant differences. First, the claim that practice organization is embedded in cognition utilizes a very thin conception of cognition as familiarity and knowledge. Second, no participant in a given practice grasps the entirety of that practice's organization. One reason for this is that what organizes practices evolves. Another reason lies in the indefiniteness of some of what qualifies and the susceptibility of this

to determination and alteration through disputation. A third reason is that any given participant grasps only certain components of a practice's organization, and different participants grasp different subsets of it. In these ways, practice organizations are not like the structures postulated in cognitive linguistics.

At the same time, the fact that practice organizations are temporal phenomena in the sense that they change over time does not entail that they are structures of a familiar empiricist sort diametrically opposite to structuralist conceptions. According to this empiricist conception, structures are patterns in actual actions and practices, in the present case, patterns formed by actions expressing or upholding particular understandings, rules, or elements of teleology or emotion. This conception of structure is popular in research circles that reduce what is to what is actual, that is, to what is encounterable or measurable. Practice organizations cannot form patterns because it is possible for rules and teleological elements such as prescribed or acceptable ends and tasks *never* to be upheld or expressed (this is less likely to be true of emotions). An organizing element that is never expressed is not part of any actual pattern. Another reason practice organizations cannot be patterns is that any component of practice organization, including understandings and emotions, can be expressed or upheld irregularly. Irregular occurrences cannot be part of patterns since patterns are regularities or generalizable configurations: singularities, erraticness, and shifting frequencies or rhythms do not fit.

It is important to realize that the organization of a practice does not govern activity in the sense of determining it. Practical understanding, for instance, does not determine activity; rather, it informs it. Suppose, for example, that someone out walking sees a friend on the other side of the street. He unreflectively raises his hand and moves it back and forth. This spontaneous act of greeting is informed by his knowing how to greet his friend in this situation through performances of bodily actions. He could also have nodded his head, smiled, or called out, "Hello" (etc.). Rules and teleoaffective structures, meanwhile, govern activity by virtue of their normative character, the fact that they specify how one ought to act or how it is acceptable to do so. Normativized items do not govern activity by determining it, that is, by causing people to do what is normatively enjoined or permitted. Indeed, nothing forces or guarantees that people will do what is acceptable or prescribed. Normativized items instead govern activity by circumscribing it (see Schatzki 2010: chapt. 4), and they accomplish this by laying down what is or is not enjoined or acceptable. Another reason practice organizations circumscribe activity instead of determining it is that they almost always embrace multiple acceptable or enjoined ends, tasks, emotions, leaving open which are pursued by participants. And, of course, it is always possible that someone will act contrary to what is normatively acceptable and prescribed. In short, rules and teleoaffective structure are dimensions of the *context* of activity that bear normatively on what people do.

Of course, normativized items can bear on human activity, and practice organizations can thereby circumscribe activity, only because people are disposed to act normatively, that is, only because they tend to uphold normativity. Laying

down what is prescribed or acceptable circumscribes activity, and in this way governs it, only if people are disposed to act normatively. People are so disposed, moreover, because they are brought up to uphold normativity. And it is plausible to conjecture that people bring up their children to uphold normatively, and that this complex formed of people being disposed to act normatively and bringing up their children to follow suit, arose through biological evolution. However that might be, it is the normative character of practice organization, together with people's disposition to uphold normativity, that largely explains why people tend to observe what organizes practices. Note that in upholding the organizations of practices people thereby perpetuate practices. Normativity is central to the persistence of practices (and bundles).

Finally, it is important to recognize that participants in a practice do not carry it out in the same way. Warde (2005), for instance, describes what he calls the "internal differentiation" of a practice: the different levels of commitment to and involvement that different practitioners exhibit, as well as gender differences in how it is enacted. What's more, Gloria Dall'Alba (Dall'Alba 2009, Dall'Alba and Sandberg 2010) observes that there are different ways of carrying on those professional practices that involve multiple roles and positions (such as doctor and nurse in medical practices or lawyer and paralegal in legal ones). These different ways of carrying on professional practices are bound up with different ways of occupying the roles and positions concerned (i.e., being a doctor, nurse, lawyer, or paralegal). Similarly, the understandings, rules, and teleoaffective structures that organize a practice can be apportioned among the roles or positions found in it. The rules, for instance, that govern the actions of physicians might differ from those that govern the activities of nurses. In short, practices accommodate variation among their participants and in how these individuals carry them on (for discussion of what is responsible for participants taking up particular possibilities, see Schatzki 2017b).

In sum, practice organizations are mutable temporal structures. They largely govern human activity by forming sanctioned public normative contexts in which people proceed. A social practice is thus an open spatial-temporal array of doings and sayings that is governed by a largely normative array of understandings, rules, teleologies, and emotions. It is also a complex that accommodates significant differences among its practitioners.

Arrangements

I wrote above that the practice plenum is the total nexus of practices and material arrangements. Material arrangements are just that—arrangements of material entities. Chapter three explores materiality and thus the nature of material arrangements. For now, the material entities that form arrangements can be understood to be of four types: humans, artifacts, organisms, and phenomena of nature. Several notes about this typology. First, the categories are not mutually exclusive; in particular, humans are organisms, and most organisms are things of

nature. Second, I do not claim that it is always unambiguous to which category a given entity belongs. Two familiar examples are viruses and polluted estuaries. Finally, this typology is not meant to be an immutable or the only sensible, or even best possible, typology of the entities that make up the arrangements through which social life, that is, human coexistence, transpires. For instance, the typology as formulated does not easily accommodate certain noteworthy entities that in the future might confront human beings, namely, robots or aliens that are as if not more intelligent than us. It is a good question, of course, whether these entities—if they appeared—could be treated by my theory simply as components of material arrangements or instead would have to be granted statuses that humans enjoy, for example, practice participants. Maybe humans would simply have to accept whatever statuses, more "elevated" than our own, such entities claimed. What I do aver about this typology is simply that it is a useful, adequately comprehensive, experientially based sorting of the entities that compose arrangements.

The word "arrangements" must be properly understood. To speak of the arrangements amid which practices proceed is to point to the multiplicity of material entities that are involved with human practices and also to the fact that these entities are connected to one another. Entities form arrangements—of connected entities. Arrangements as I think of them bear some resemblance to what Bruno Latour and Michel Callon call *réseaux* (networks), what Deleuze and Félix Guattari called *agencements* (assemblages or arrangements), and what Foucault called *dispositifs* (apparatuses). Each of the latter three concepts denotes a configuration of social things, whereby they "hang together, determine one another via their connections, and as combined both exert effects on other configurations and are transformed through the actions of these other configurations" (Schatzki 2002: xiii). The above thinkers, however, seek to build up social life from and around these configurations. By contrast, I, as an advocate of theories of practice, complement arrangements with practices and treat bundles of practices and arrangements as the centerpiece of a theory of society. Arrangements moor the material dimension of society.

Although theorists of practice concur on the centrality of practices to society, they disagree on whether material entities are components of practices or connected to them. My account joins those of Bourdieu and Giddens (and others) in treating practices as conceptually distinct from the material arrangements—the congeries of material entities—amid, with, and through which practices transpire. This position contrasts with those of, for instance, Reckwitz and Shove, Pantzar, and Watson that treat material entities as one type of element that is brought together by performances to form practices. This difference is of no real significance in some contexts. Indeed, my account converges with Shove et al.'s in claiming that because intertwinings of practices and materiality are fundamental to social life, the notion of a bundle is the central unit of conceptuality in social analysis. Still, an advantage of differentiating arrangements from practices while acknowledging their intimacy is that it introduces more degrees

of freedom into a practice theoretical account of social life and thereby affords the account greater flexibility in capturing the contributions of different entities to social affairs. For instance, differentiating practices and arrangements subtends recognition that different practices can be carried on amid, with, and through one and the same arrangements and that particular practices can be entangled with multiple arrangements.

The word "arrangements" does not imply that the material configurations it denotes have been arranged, say, through human action. As a matter of fact, of course, humans, from the beginning of their social existence, have arranged, that is, set up and altered elements of the circumjacent environment through which they proceed. As time proceeded, moreover, they came to arrange ever more of this environment, to the point that today these environments are often entirely arranged by humans, and humans are ineradicably dependent on a myriad of material things (Hodder 2014). At the same time, it is important to keep in mind that some material entities, and not just organisms, are self-moving and can thereby alter arrangements on their own. This is not to mention the many physical-chemical, biological, and informational etc. processes that can befall arrangements and alter them.

It is important to emphasize, moreover, that although my use of the concept of arrangements highlights the involvement of material entities in social life, such entities bear relations to one another that do not enter social life and might be independent of it. Indeed, the material entities that compose the arrangements with which practices bundle can be and often are linked independent of social life and human practices. (As explained in chapter three, arrangements also connect with wider complexes of material entities that are not part of social life.) The importance of recognizing the existence of such independent ties has been emphasized lately by so-called "speculative realism." I am not going to argue for the point here, but in my opinion, contra speculative realism, such ties should be comprehended through the findings and theories of contemporary science. The ties between earthquakes and tectonic movements, the processes through which one galaxy captures another, and the processes through which insects exploit plant hosts, must be understood through contemporary geoscience, astronomy, and biology. Links (between material entities) that depend on human practices likewise should be understood with the help of these sciences, for example, electronic connections between mobile communications devices or the processes through which barreled distilled spirits absorb flavors and colors from barrels. This claim about science holds regardless of whether the entities involved are humans, artifacts, things of nature, or organisms. There presumably also exist material and biological relations among entities (both those that do and those that do not compose arrangements), as well as material and biological processes that befall them, of which we presently have no inkling.

The entities that make up the complexes denoted by the word "arrangements" bear a variety of relations to human activity and practices. People use or see or touch and cope with some entities as they proceed amid them. Other

entities are generally unknown to people but nonetheless directly contribute to what they do, for instance, stomach and intestinal microbes or the internal components of electronic devices. Still further entities and complexes thereof underwrite activity even though they are not close by, for example, satellite communications networks and the material infrastructures that provide electricity and water in support of activities people pursue in their practices (see Shove, Watson, and Spurling 2015). Such networks and infrastructures are arrangements, complexes of interconnected material entities. Certain components of such arrangements (e.g., the pipes and electrical lines that enter buildings) connect to the immediate arrangements amid which people ply many if not most of their practices (at home, at work, at service, and while shopping, recreating, or moving among these). Other elements of such arrangements (e.g., sewer lines and transmission lines in the countryside) are linked to practices—for example, repair practices—primarily when something goes wrong. Once they are constructed, moreover, networks and infrastructures persist independent of people's actions; they are objective. Their objectivity, however, does not entail that no further human activities or other material processes can destroy, damage, or wear them down. Events and processes also occur through or to infrastructures and other material arrangements. Given this complexity, it is important to categorize the different ways that material entities and the arrangements they form connect to and make a difference to practices (for examples, see Morley 2017 and Shove 2017).

The idea of an arrangement implies that arranged entities are related to one another. Relations between arranged entities can take several general forms, including physical contiguity, connective physical structures (natural or human built), movements of material entities (e.g., of electrons or bodies), interactions among organisms or between organisms and artifacts, and being subject to the same material, biological, informational, and other processes. Another way that material entities link and form arrangements is by being set up in or incorporated into the same human practices. Meanwhile, which arrangements exist is not independent of human practices. As noted, for example, humans are responsible for ever increasing numbers of arrangements. More generally, which arrangements exist depends, not just on how people build their environments, but also, in conjunction with features of complexes of material entities, on the practices people carry on and their viewpoints, interests, and ends. For example, where one arrangement in a building ends and another, contiguous one begins depends on the practices that are carried in the building in conjunction with physical features of the arrangement that are salient to or designed by humans, for instance, walls, passageways, and the layouts of meeting rooms. Entities of nature, moreover, form very large complexes of material entities on their own. Where one natural landscape begins and another, contiguous one ends depends on such matters as the visual viewpoints people assume, points and paths of access to the complexes involved, and features of the complexes that are salient to humans, for example edges (cf. Casey 2017). It is typically in relation to particular practices,

among other things, that large complexes of material entities contain this and that particular arrangement.

An additional word should be said about material entities of two particular types: animals and human bodies. Animals—at home, in zoos, on farms, in stockyards, on patrol, on grocery store shelves, and in hunting grounds (etc.)—are components of the material arrangements amid, with, and through which practices are carried on. As such components, they differ from, say, artifacts. They move about on their own and do things, and they lead lives that exhibit some, sometimes little and sometimes more than expected, of the complexity, diversity, and psychology of human lives. As a result, the differences they make to bundles vary across animals and differ from the contributions of artifacts and things of nature; any clairvoyant account of social life is sensitive to these differences, including to the possibility of labeling animals "subalterns" (Arcari 2018) *if* this is appropriate. Animals also exist and interact a lot with one another independent of bundles. Pets and working, including companion animals are particularly interesting in this context since people welcome them into their personal and social lives in ways that are not extended to other animals. More generally, relations between people and other animals, and among animals themselves (like relations more generally between people and material entities and among material entities), and not relations among people alone, can help make up social phenomena (cf. Latour 1992, Callon 1986, Law 1992, Deleuze and Guattari 1987; cf. Clark 2015). Animals are also obvious candidates to be participants in social relations (e.g., Koski and Bäcklund 2015, Strengers, Nicholls, and Maller 2016; forests, too, e.g., Kohn 2013). But from the point of view of the present account of social life, they are still components of the arrangements amid, with, and through which practices are enacted. I make no apologies for the human-centeredness of this assertion. The present book aims to analyze human social life. According to its analysis, animals, like human bodies, number among the material entities amid, with, and through which human coexistence transpires. I have made clear, moreover, that saying this does not entail that animals are *merely* material entities. Challenging questions, meanwhile, are posed by the most intelligent nonhuman animals, for example, dolphins and bonobos. Do such creatures carry on practices? If so, are their practices similar to ours? Since the present work is concerned with human society, it will not address such questions.

Human bodies are another sort of material entity making up material arrangements. They differ, of course, from other sorts in various ways, not the least of which is the fact that people perform actions and carry on practices through performings of bodily actions. This remains true however much human bodies are prosthetically improved or equipment extends or amplifies what humans can do. A person's body also occupies a unique position in his or her perceptual field. And the human brain is larger and more complicated than those of other species. In other ways, however, human bodies are like material entities of other sorts: they resemble other organisms in endless ways, they share physical-chemical properties with many organic and inorganic entities, and they bear many of the sorts

of relations to other material entities that material entities, generally, maintain among themselves (e.g., spatial location, gravitational attraction). There is no denying that the unique role human bodies play in human life gives theory reason to differentiate them categorically from other material entities. But this uniqueness simply counsels, once again, attending to differences: the uniqueness and singular importance of bodies must be acknowledged while the fact that they are components of material arrangements is accommodated. Again, things get conceptually interesting vis-à-vis dolphins and bonobos. What are we to say about bonobo and dolphin bodies, lives, and societies and about the roles that their lives and bodies may and should play in our bundles? Indeed, what are we to say, ethically speaking, about animal species more broadly in this context? The speculative cases of aliens and super intelligent robots serve up yet further dilemmas.

Finally, a word should be added about the idea that arrangements contain material *entities*. The word "entities" might be heard as roughly equivalent to "objects" or "things," which designate relatively discrete, tangible beings. This is a mistake. An entity is simply something that is. More important, some of the material beings that help make up social life are not discrete or tangible. Prominent examples are liquids, including water, and gases, including air. The atmosphere, moreover, is material in character but likewise nondiscrete and largely intangible. And what about land? Liquids, gases, land, and atmosphere are all material entities (see chapter three). At least the first three, moreover, can be components of material arrangements. What, however, usually qualifies as such a component is a delimited chunk of water, air, or land. A stream, for instance, can be part of an arrangement amid, with, and through which distilling practices are carried on. It is not the stream as a whole, however, but the section of it alongside the distillery (where, for instance, the intake pipe for the condensation system enters it) that is part of this arrangement. In this way, ponds, bays, disputed waters, beachside currents, and fishing grounds can be parts of bundles even though they are tied—without break—to larger bodies of water that extend beyond the bundles involved. The same considerations also hold, say, of the stale air in a meeting room, a city's dirty air, or a parcel of land. The fact that a given expanse of water, volume of gas, or parcel of land is not cleanly and definitively demarcated from others does not diminish its eligibility to be part of arrangements. It entails only that the limits of the arrangements involved are indefinite; some of the relations among the components of the arrangements are probably indefinite, too. Similarly, the fact that particular expanses, volumes, and parcels connect with others entails only that what happens in one arrangement (e.g., the distillery arrangement that includes the section of the stream alongside the distillery) can depend on (1) other arrangements or bundles (e.g., ones further upstream), (2) connections between them (e.g., the rushing stream), and (3) the wider expanses of liquid, gas, or land that, at a given moment or period of time, might not be part of any bundle. Atmosphere, meanwhile, has to be treated differently than liquids, gases, and land. This is also true of earth. I touch on these in the next chapter.

Relations and bundles

The plenum of practices does not contain a single practice and a single arrangement. It contains many practices and many arrangements. These practices and arrangements link in diverse, changing combinations, yielding a panoply of bundles that evolves with time. A variety of relations link practices and arrangements into bundles.

Practices, generally speaking, use, set up, give meaning to, and are directed toward and inseparable from arrangements and their components, whereas arrangements and their components induce, prefigure, channel, and are essential to practices. Each of these verbs or verb phrases denotes a type of relation between practices and arrangements. Practices and arrangements form bundles by virtue of these relations. Note that multiple practices can bundle with the same arrangements at the same or over time and that a given practice can bundle with multiple arrangements at the same or different times.

Most of the just named relations are self-explanatory. Using and setting up are just that: using material entities and constructing as well as altering arrangements of them. The existence of relations of these sorts does not depend on whether, or to what extent, people have intentions or plans in using entities and setting them up: what counts is that their actions utilize entities or effect changes in arrangements of them. By "are directed toward", moreover, I mean that people are directed toward entities in their activities and, thus, in their enactment of practices. A person who looks at something, for instance, is directed toward it, just as she is when looking it over, playing with it, turning away from it, listening to it, feeling it, fleeing it, talking to it, thinking about it, or imagining it. People are likewise directed toward entities and states of affairs through their mental conditions and cognitive states, for instance, when hearing, fearing, hoping for, desiring, longing after, or yearning for something or believing, hoping, expecting, or knowing that something is the case. Each instance of directedness toward obtains between a person and an entity, event, or state of affairs and is effected through an activity, a cognitive state, or an ongoing emotion, state of consciousness, or conative condition. The entity, event, or state of affairs can be real or imaginary and differ from what someone is directed toward it as. In the present context, the objects of such relations are bodies, organisms, artifacts, things of nature, arrangements of such entities, or states of such entities or arrangements.

The giving meaning relation is more diffuse. Lying behind it is the idea, widely propagated during the 20th century, that meaning derives from human existence. One version of this idea is that the meanings of things in the world, like the meaning of the world in toto, derives from human practices and people's aims, thoughts, hopes, fears, and the like. This idea applies to the meanings that particular entities bear. This here object, for instance, is a cell phone—as opposed, say, to a paperweight or a shiny dense rectangular object—only in relation to, or in the context of, such human practices as those of industrial production, communication, mobility, and the internet. Similarly, whales are magnificent

sea creatures—as opposed, say, to marine mammals—only in the context of such human practices and products as whale watching, PR, literature, and poetry. Of course, unlike the cell phone, which as an artifact exists only because of practices, whales do not owe their existence to particular human practices. Still, their meaning as magnificent creatures does so. It is a property whales come to enjoy in relation to human practices. Of course, being marine mammals is likewise something these here entities are in relation to human practices, namely, those of biology. The difference is that the practices of biology, unlike those of industrial production vis-à-vis cell phones, do not bring these mammals into existence. Note that the relationality of meaning does not imply that these here entities are not *in fact* magnificent creatures and marine mammals.

Finally, some practices cannot exist independent of particular material entities. Up at least to the present point in history, for instance, this relation holds between practices generally and human bodies. Some practices, moreover, cannot exist without certain of the material entities used in them. Practices of bourbon production, for example, cannot exist independent of stills, corn, and barrels, just as mobile communication practices cannot exist independent of computers, tablets, and cell phones. "Cannot" does not mean logically impossible. Rather, it means infeasible in present circumstances or presently inconceivable. Whether given practices cannot exist independent of particular entities—including human bodies—is a geohistorical matter tied to the bundles that exist in particular regions and eras; it is not an absolute state of affairs. I might add that there is a danger of overemphasizing relations of inseparability. It often seems that a given activity can be carried out, or a given result achieved through activity, only with the assistance of particular entities. In most cases, however, the activity (e.g., transporting bourbon) can in fact be carried out with the assistance of objects and setups other than the ones standardly used in the geohistorical region in which it is performed. Similarly, in most cases the same results (e.g., selling bourbon at a distant market, a satisfied customer) can be achieved through activities other than those through which it is standardly achieved then and there. Standardization, dependability, and regularity often obscure alternatives but never obliterate them.

Correlatively, material entities and the arrangements they form induce, channel, prefigure, and are essential to practices. The last of these relations is the reverse of the inseparability-from relation just discussed. Human bodies, for instance, are essential to practices because practices are carried out through bodily actions.

The very important relation of inducing is the same relation as leading to. Objects, arrangements, and the events as well as processes that befall them can lead people to perform certain actions and to carry on certain practices. An approaching tsunami, for instance, might lead people to text friends and relatives, to collect their children from school, to seek higher ground, and the like. The approaching tsunami induces them to take these actions: it is that in response to which they perform them. Similarly, the arrival of a shared image (an event that happens to a server and then to electronic devices) can induce someone

to groan, cheer, respond, turn to tell a friend etc., just as a pet's antics can lead someone to smile, get upset, take a quick picture, call out to family members, and the like. Note that a material phenomenon can induce activity only if the actor(s) involved encounters it and, thus, in some sense is aware of it or knows or believes something about it. The fact that something can induce a person to act only if the person is directed toward it does not preclude material entities from causing actions outside people's ken. When this happens, however, the entities do not induce actions but instead cause them in some other way. If, for example, an ingested substance (e.g., a Twinkie) brings about physiological changes that result in someone performing particular actions (e.g., murdering the mayor), the ingested substance does not induce the actions.

Material entities and arrangements also channel activities and practices. What I mean is that such phenomena, being physical, obstruct movement and, thus, the performance of certain actions. People generally try to avoid collisions with physical things and take paths through physical space that go around them.

Arrangements, finally, prefigure activities and practices. "Prefiguration" denotes the bearing of the present on the future. The usual conception of this bearing is that the present makes certain future actions or courses of action possible and others impossible, where possible and impossible are not logically possible and impossible but either physically possible and impossible or feasible and infeasible. This way of thinking engenders the conceptual duo of enablement and constraint, which has been familiar fare in accounts of social life over the past forty years and longer. It seems to me (see Schatzki 2002: chapt. 4) that this duo provides an overly thin analysis of the bearing of the present on the future. A richer analysis complements enablement and constraint with the idea that the present qualifies future possible actions and courses of action on a wide variety of registers such as easier and harder, longer and shorter, more and less expensive, more or less time consuming, of greater or lesser nobility, normatively acceptable or unacceptable, flashier or more reserved, and so on. No theoretical limit exists to how many registers might be involved in prefiguration, either in general or on specific occasions. On any specific occasion, moreover, which registers are involved depends on features of the actors concerned such as their ends, emotions, skills, and situations. The development of a new form of bourbon (such as small-batch bourbons, which are brands assembled from smaller numbers of barrels than normal) prefigures actions for a distiller who prioritizes tradition differently than it does for a distiller who is determined to save his operation from bankruptcy. The present never bears on the future simply through the delimitation of possibility but always more richly and specifically by qualifying possible paths of action on certain registers made pertinent by people's skills, situations, ends, and emotions.

Like other aspects of the world, material entities and arrangements thereof prefigure activity. In obvious ways, such entities or arrangements as a wall, the presence or absence of a still, floods, excess stocks of particular grains, the layout of company headquarters, extreme heat or cold, veins in a block of marble,

transportation, communication, and computer networks, new electronic devices and software programs, the chemical properties of particular materials, squadrons of whales passing down the coast, the eating habits of pets, the activities of viruses and of stomach microbes, acid ingestion, and a broken leg—these phenomena qualify multiply ranges of (possible) actions for people who encounter, proceed amid, take account of, and suffer them, in ways that reflect these people's ends, situations, and emotions etc. Material entities and arrangements endlessly qualify possible actions and, thus, the possible enactment of particular practices. They thereby bear on which practices people execute.

I do not claim that the nine relations just outlined exhaust those between practices and arrangements (more will be discussed in chapter three). They are simply types of relation that bear significance for the character and course of social life, above all, for the composition and evolution of simpler practice-arrangement bundles. These nine types, moreover, can be collected under four broader headings: causality (setting up, inducing, and channeling), constitution (inseparability from and essentiality to), action and mind (use, bestowing meaning, directedness toward), and prefiguration. Note that the category of causality umbrellas disparate phenomena: activity intervening into the world, the world inducing particular actions, and solid objects blocking certain paths and movements.

Practices are bundled with arrangements through these relations: human activity is intimately entwined with material entities. The richness of this entwinement underlies the claim that bundles, not practices, are the central unit of conceptuality in the analysis of social life, thus the central concept in social ontology. It is also why, as mentioned, theorists such as Reckwitz and Shove build materials into practices.

Relations and constellations

The practice plenum contains a myriad of bundles. These bundles are not independent of one another. Rather, they connect. In connecting, they form larger constellations, which are simply more complex bundles of practices and arrangements. It is due to these connections that bundles, and the constellations they form, link into a single overall nexus of practices and arrangements—the practice plenum.

Any social phenomenon of any complexity consists in, or consists in features of, some constellation of practices and arrangements. This is true of governments, sports leagues, universities, academic departments, social movements, social conflicts, scientific, technological, or political revolutions, racial prejudice, economic enterprises, economic competition, internet scams, and digitally mediated associations. The number of practices and arrangements that compose a bundle or constellation can range from few (e.g., working at the office) to many (e.g., an economic system). Constellations that embrace more constituent practices and arrangement are usually, though not always, larger—that is, more spatially far-flung—than constellations that embrace fewer (see chapter seven).

Conversations among employees around a still, for example, are smaller than the distillery where they occur, which itself is smaller than the distilling industry. By contrast, although the industry is larger than the local community where the distillery is located, the community likely embraces a greater range and even number of practices and arrangements. In this sense, it is more complex than the industry.

How do bundles connect into constellations? One prominent way of thinking holds that bundles form constellations through relations of dependence and codependence (e.g., Shove et al, 2012, Kemmis et al. 2014). Dependence and codependence certainly are relations that join bundles (or practices). As I see things, however, they result from certain facts about *other* relations between bundles, for example, chains of action (see below). These other relations are what *actually* link bundles into constellations. To speak of dependence and codependence, as a result, is to point toward certain facts about relations of these other kinds. One bundle depends on a second when the world is such that the first can obtain something it needs only from the second (a weaker sense of dependence requires only that, as a matter of fact, the first bundle acquires the needed item from the second). Gaming practices, for instance, require gaming software and appropriate hardware. These are obtained from stores, online distributors, and friends. Gaming practices, consequently, depend on the practices of stores, online distributors, and friends (more precisely, they depend on these practices or others, for example, those of stealing or piracy). But it is by virtue of chains of action that link the practices of stores, distributors, and friends to gamers and to gaming practices that the requisite software and hardware can and actually do make their way to the latter. Hence, the dependence of gaming practices on these other practices lies in the fact that the sole possible, or better, feasible chains of action through which these items can be obtained link gaming practices to these others. The dependence of gaming practices on these other practices amounts to this situation. So the contribution that dependence makes to bundles forming constellations lies in the existence of this situation.

Bundles relate, and thereby form constellations, principally through relations of five basic sorts: (1) common and orchestrated teleologies (ends, projects, actions), emotions, rules, and general understandings, (2) intentional relations, (3) chains of action, (4) material connections among arrangements, and (5) prefiguration.

(1) Bundles overlap through common teleologies, rules, emotions, and general understandings. The different bundles that compose a sports franchise, for instance, might share the end of a successful season, the ethos that winning is everything, and an emotional high after a big victory. Teleologies, rules, emotions, and understandings are orchestrated, moreover, when different bundles nonindependently pursue different ends, exhibit different emotions, uphold different rules, or are imbued by different understandings. An example is the sense that corporations are crooks imbuing the bundles of a municipal committee hearing on high cable rates nonindependently of the ethos of profits at any cost

(2) imbuing the bundles of the local telecommunications company. By "intentional relations," furthermore, I mean participants in one bundle being directed toward other bundles and constellations (or their components) in doings, sayings, and mental, emotional, and cognitive conditions, for example, in discussing, planning, exchanging, threatening, thinking, desiring, and believing.

(3) As indicated above, furthermore, chains of action form a conduit through which goings-on in one bundle link with those in others. A chain of actions is a sequence of actions, each member of which responds to the previous member or to a change brought about by the previous member in the world. Such chains form the subject matter of chapter four. An important effect of such chains and of nexuses of them is the threading of such items as people, goods, ends, beliefs, emotions, microbes, and information through bundles and constellations. Circulations of such entities can be crucial to the workings of social affairs. For instance, when beliefs, desires, and emotions flow among people (cf. Tarde 2007, Collins 1981), people's ends alter, what they react to—and thus which chains they extend—shifts, they observe different rules, and teleoaffective structures evolve. Most crucial, such flows help effect, not just changed bundles, but shifts in which bundles people carry on (what Shove and Pantzar (2007) call "recruitment"). It might be thought, consequently, that circulation, or threading through, should be identified as a sixth sort of relation between bundles. In actuality, however, circulations form a hybrid sort of relation built from chains of action and material connections. The communications, exchanges, postings, and other interactions and events through which desires, beliefs, and emotions flow among people and practices are types of or components of materially mediated chains of action.

(4) Material connections, the fourth type of relation among bundles, take many forms, including infrastructures, continuous physical structures (natural or artifactual, including built spans), telecommunication and transportation systems, passageways and points of access and egress, and physical processes such as the movement of electrons and bodies. The category of material relations also includes spatial relations such as inside and outside, above and below, overlapping and separate, larger and smaller, and so on. As just suggested, material connections are important ingredients in chains of action.

A different sort of material relation is the sharing of material entities. Digital devices such as computers and mobile phones are familiar entities that link multiple bundles by being present in each of them. Less flashy entities such as rocks, automated switches, and landline phones can achieve this as well, as when a rock used as an altar in a pagan ceremony is later the focus of attention in a criminal investigation. So, too, can animals, especially pets.

(5) The fifth basic relation between bundles is prefiguration. Bundles do not prefigure other bundles by qualifying the latter's possible courses of action. For the idea that bundles and constellations perform actions or follow courses of action is problematic. Bundles can, however, prefigure other bundles by way of prefiguring possible courses of action in the latter. For instance, legislative deliberations about new government laws regulating bourbon prefigure people's courses

of action in the distillation and public relations practices of distilleries. In this way, the legislative bundle prefigures the temporal development of the distillery bundle. Note, however, that because bundles embrace the activities of multiple people, the prefiguration effects of bundles quickly become complex, and it can be difficult to state them concisely in words.

The relation of essentialness seems to hold among bundles. Surveillance bundles, for instance, cannot exist without bundles to keep track of; East German border guards sensed this in 1989 when people streamed across the border and they abandoned their posts. The essentialness of one bundle to another, however, amounts to the dependence of the second bundle on the first. Bourbon production bundles, like software development ones, are essential to, respectively, bourbon distribution bundles and mobile chat room ones in the sense the latter cannot exist without them. This is just another way of saying, however, that the latter depend on them. As discussed, moreover, bundles and constellations come to depend and codepend on each other according to the feasibility between them of relations of more concrete sorts. Bundles, accordingly, can be essential to other bundles, but essentialness is not an additional sort of basic relation among bundles.

A moment's thought reveals that the number of relations between practices and arrangements or among bundles is immense. Particular material arrangements, for example, prefigure practices connected with them in countless ways, while chains of action and material connections zigzag in all directions and link all manner of bundles. Bundles are regions of particularly dense relations among particular practices and arrangements. For instance, the bundle as part of which a scientist conducts an experiment is a particular concentration of relations between research practices and particular settings, namely, her lab and office. These practices and settings link with other practices (e.g., of child care, government regulation, and suppliers) and other settings (e.g., kitchens, government buildings, and warehouses). But these connections are less dense. Similarly, the constellation that is an academic department or a company is marked by a particularly dense relatedness among the bundles that compose it. Again, these bundles link up with the bundles composing, respectively, other departments, dean's offices, and university research offices or other companies and government inspection or regulation agencies. But the relations composing these latter states of relatedness are thinner—fewer and less frequent—that those composing the department or company. At the same time, they are denser than those between the department or company and, say, local sports stores and leagues, and this greater density marks the existence of a college/university or industry.

All social phenomena consist in constellations, or aspects of constellations, of practices and arrangements. They differ in the practices, arrangements, and components thereof involved and in the density, continuity, and spatial-temporal spread of relations among these. It follows that all social phenomena—large or small, complex or simple, local or global, micro or macro, ancient or contemporary, economic or political, cultural or social (sic)—are composed of the same basic ingredients.

Relations between individuals

I just discussed various relations that exist in the practice plenum and help constitute social phenomena. These relations are not of sorts generally recognized in social analysis. They are, instead, relations that reflect an ontology whose central concept is that of bundles. Now, an account of social life will seem more plausible to those who do not advocate it if it can give insightful analyses of entities whose existence is acknowledged by theories of social life generally. Consequently, to conclude the present analysis of the practice plenum, I want to discuss how this analysis conceptualizes relations of one more or less universally acknowledged sort.

The most widely recognized sort of relation in social thought is of a connection between or among individual people (the second most common conception is probably that of relations between positions that individuals can occupy, e.g., Berger and Luckmann 1966, Foucault 1976, Bhaskar 1979, Laclau and Mouffe 1985, Sayer 1992, Bourdieu 1968, 1998b). The wide recognition that relations of this general sort enjoy reflects the prominence of individuals in theories of social life. Essentially all individualists discuss such relations in their analyses of sociality, though disagreement reigns about whether connections between individual people are anything more than compounded nonrelational properties of the individuals involved. Almost all nonindividualists, too, acknowledge individuals and analyze relations between them. Indeed, it is arguably incumbent on any account of social life to do so.

Often, theories of relations between and among individuals highlight interactions and hold that relations between individuals are instituted or brought about through face-to-face and other interactions. Interactionally secured relations exist between lovers, among family members, among colleagues, between salespersons in one part of the world and customers in another, between people who run into each other walking their dogs, between the designer of a computer interface and the people who build the interface, among the members of an online chat group, between a populist politician and the citizens loyal to him, and so on. The idea that relations between people are largely instituted or mediated by interactions fuels the idea that these relations are processes, which unfold through interactions between people over time (see Crossley 2013). Relations processually understood thus are series of interactions, thus series of event series. They are processes in the sense advocated by Abbott (see chapter one). Norbert Elias defended a good example of such a conception of relations between individuals. Elias (e.g., 1978) conceptualized states of society as figurations, which are arrays of interdependent people. The relations of interdependence that link members of a figuration are manifested in and effected through interactions among them. Elias described these figurations as processes (ibid.: 131), meaning that dependences among people evolve over time according to how they act and act toward one another.

The idea that relations between individuals are or embrace processes is a good one (see also Powell 2013), though the role that interaction series play in such processes cannot be addressed here. An especially provocative interpretation

of relations between individuals as processes construes them as transactions. A transaction is a relation between two entities that precedes them and is responsible for their emergence (see Bentley and Dewey 1949). The idea descends from John Dewey's (1896) Hegelian insight that analyses of human behavior cannot atomistically focus on stimuli and reactions alone but must also attend to the preceding, enveloping context (the behavioral reflex-arc) in which stimuli and reactions are identifiable as specific entities. Some social theorists sensitive to the pragmatist legacy have explicitly treated relations among people as transactions; these theorists also tend to understand transactions processually. They take as their epigram Erving Goffman's (1967: 3) quip, "Not, then, men and their moments. Rather, moments and their men." In their hands, this motto becomes "Not, then, people and their interactions. Rather, transactions and their people." One prominent such theorist is Mustafa Emirbayer (1997). Emirbayer claims that relations between individuals are transactions understood as ongoing processes that precede individuals, through which individuals emerge as who they are. The relation, for instance, between a child and a parent is a process that unfolds over time, out of which the child and the parent jointly become the people they are.

Emirbayer analyzes the contrast between transactional and nontransactional relations as that between relations conceived of as dynamic, i.e., as unfolding processes, and relations conceived of as "static ties between inert substances," that is, as static ties between "preconstituted, self-subsistent actors" (1997: 286, 295). He is wrong, however, to suggest that nontransactional relations are static and their relata inert and preconstituted. For many conceptions of relations that deny that relations precede their relata and are responsible for what the relata are nonetheless affirm that relations and what they relate evolve, thereby acknowledging the fundamentalness of dynamism or process. What is more, even alleged transactional relations between individuals are not, strictly, transactions. Rather, they have transactional *and* nontransactional aspects, which repeatedly combine, re-emerge, and recombine as the process unfolds over time: what a person *becomes* in and through a given phase of the process depends on what she *was* as that phase begins, where what she was at that moment was the complex resultant of earlier phases of both this and other relations cum processes. It is true that the relation between, say, a child and a parent is a process that unfolds over time, and that what each eventually becomes through the process depends on the unfolding of the process as a whole (what each becomes also depends on relations with others). Yet, what each is at various moments of the process always precedes what each subsequently becomes. People, in other words, contribute to their relations to others as much as these relations determine them. As Lave and Wenger (1991: 53) write, "The person is defined by as well as defines … relations." The same argument, incidentally, applies to the opposition Abbott (2007: 12) constructs between the proposition that "a personality exists and has as properties certain proclivities" and the proposition that "the available environment … governs the way the personality is constituted." Both propositions are

true. Thus, although some relations between specific people are processes, they are misleadingly described as transactions.

I affirm the processual nature of most relations between specific people. Such relations consist in confluences and ties between the life trajectories (see chapter three) of people within particular bundles and constellations. The relationship between a mother and her daughter, for instance, consists of continual interactions, chains of action, and intentional directednesses and orientations (e.g., desires, thoughts, and emotions) between them, many of which likely involve other people as well. The existence of the relationship consists in the occurrence of these phenomena. These phenomena, moreover, occur as part of particular practices and bundles—at home, in the car, at school, in stores etc.—whose composition, organization, and history bear on what takes place. Many of these mother–daughter relationship-constituting interactions, chains, and intentional directednesses also help constitute other social matters such as power relations and gendering processes that are therewith bound up with the relation between the mother and the daughter. The relation, in short, transpires within and across particular practices and bundles. The positions of mother and child are also named or notionally embedded in the sayings, rules, and teleoaffective structures that compose the practices and bundles involved.

Essentially all relations among individuals can, I believe, be analyzed in some manner such as this. Such relations embrace events and (Rescherian or Bergsonian) processes that transpire within practices and bundles, where who and what the individuals are develop. Of course, theories of practice depart from theories that contend that social life is primarily constructed out of relations between and among individuals: the practices or bundles where such relations transpire can't be reduced to the latter.

The present chapter has explored the constitution of the practice plenum. This plenum is the entirety of interconnected bundles. It provides the sites where social life transpires and the materials of which social phenomena are composed. Analyzing it, as a result, sets the stage for coming analyses of social changes: because social changes are by definition changes in social phenomena, they consist in changes in aspects and slices of practice-arrangement bundles. Social changes and their generation will be examined in chapters four and five. First, however, I want to highlight a particular aspect of the practice plenum, and thus of social life, namely, its material dimension. I dedicate a chapter to this topic because social phenomena are surprisingly full of material entities, events, and processes, and social changes are to a surprising extent materially determined.

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