

Chapter 2

General Aspects of Cooperation that Potentiate but do not Determine Concrete Cooperation

General aspects of cooperation are important to explore because they tell us:

- a general concept of what cooperation means, what kind of social-psychological relationship it is, how it relates to individuality, fulfillment, freedom, civilization, and humanness
- the social and psychological benefits that result from cooperation—e.g. what competencies will flourish once cooperation is enacted
- the host of related competencies that must be concretely developed in order to actualize cooperation
- how cooperation develops, or the processes that are necessary to develop cooperation
- that general aspects are not the entirety of cooperation, but rather only constitute part of what cooperation is. General aspects refer us to concrete aspects of cooperation that are historically developed.

Cooperation may seem to be a simple, limited act such as two people lifting a heavy object; in fact, it is a new form of life, a new order of existence, which is as different from animal life as the animal order is from plants. The new life form that cooperation generates is social life, culture, civilization. Cooperation creates a new way of adapting to the environment, new relations among individuals, new communication, speciation, ontogenetic development, psychological/behavioral capacities, and new anatomical organs and physiology. Understanding cooperation is vital for understanding all these elements of human life; implementing cooperation is vital for advancing them.

Cooperation, the Individual, and Development

Cooperation is multiple individuals acting in concert to accomplish a common task. Individuals merge themselves into a social unit that is larger, stronger, smarter, complex, agile, and flexible than any single individual, or even several individuals acting serially (sequentially), but not socially (collectively, cooperatively). Cooperation is thus an advantageous survival mechanism (in Darwinian terms) far beyond what any individual, natural mechanism could accomplish. Where biological adaptation can only enable an individual animal to see so far, a human collective can send its members to distant points and then inform each other about what they saw. This extends the collective vision far beyond the most acute vision of any individual animal.

Achieving the advantages of cooperation —strength, support, stimulation—is not as simple as it appears. It requires a transformation in the individual cooperators. They must cease to function as individuals and instead function as group members. *To cooperate is to become a distinctive kind of organism, a social organism.* This new social being is called a *socius* by Baldwin, in 1895. The *socius* connotes a social individual, part of a social body, that is a new order of life which goes beyond the individual (Ratner 1991, Chaps. 2 and 5).

A socius is not simply an individual that cooperates, it is a cooperative individual. Cooperation is not simply a behavior that one does, it is a set of distinctive competencies that accomplishes the action; it is not merely a noun or a verb, it is an adjective that qualifies and defines the organism as something new.

To cooperate is to merge oneself with other people and depend on them. One includes others within one's own action plan, considers how to integrate multiple individual acts together to produce a shared outcome. In cooperation, the other is just as necessary to your success as you are. You depend upon the other for your achievement. In team sports, for example, any team member's success depends upon the efforts of the other members.

Cooperation is accomplished by a social individual, a *socius*, who integrates others within his plans, goals, actions, and emotions. (Interestingly, the Spanish word for co-op members is “socios” This bears an uncanny resemblance to “socius.” Socios is the collective-cooperative concretization of the general sociality called socius.) What appears to be an individual physically, is actually surrounded and permeated by social bonds, which may not be always visible. A single physical body is the locus of a social body that engages in social acts for a social goal. Individuality is a part of this sociality (*socius*), it is not a self-contained unit, as much as this illusion may appear to be the case in the modern world. The many unite into a single-minded, collective entity. This is the meaning of the American motto “E Pluribus Unum”.

Cooperation is not individuals acting together to satisfy independent needs/desires. It is not two individuals who independently want/need to get from the airport to downtown so they split the cost of a taxi. Cooperation is a socially devised, social goal, desire, interest, plan, “joint intentionality”, and behavior.

Therefore, the socius is vested in helping her co-operators achieve their common goal. The socius develops social—i.e., collective—perceptions, emotions, cognitions, and self in pursuit of common goals, intentionality, and interests. (This is not the case with two people in the taxi, for neither cares whether the other reaches her destination, only that she does. The other is simply a payer who reduces the fare).

A team member's personal happiness derives from team success and collective happiness. Each member feels joy at the successful activity of any other member (a goal scored, a hit made, a great catch). The team member's happiness depends upon a collective, group identification, a common goal, and a common perception of group success. The mechanisms of social joy are therefore different from individualistic happiness at one's own success. If one team member makes a spectacular play, his individual happiness is dampened if his team eventually loses the game. The failed collective goal supersedes individual achievement in the mind of the team member. Conversely, a bad play by one team member can be forgotten in the team's collective memory, and turned into a positive feeling among all the members, if the team eventually wins the game.

The fact that thinking is essentially social is reflected in the etymology of the term "conscious." Conscious is derived from the Latin *conscious* meaning having joint or common knowledge with another person. Baldwin (1913, p. 140) stated this same idea: "the character, ends, and objects of thought and life are collective". Vygotsky (1997, p. 106) similarly said: "Essential is not that the social role can be deduced from the character, but that the social role creates a number of characterological connections".

Cooperation is Not Altruism

Cooperation is not primarily a form of altruism or helpfulness or friendliness. These are temporary, essentially individualistic acts toward another, independent individual—e.g., someone's car breaks down on the road and you stop to give the stranger a ride to the gas station, or you call the station on your phone. You are altruistic in the sense that you have no ethical or legal responsibility to help her but you do it anyway, as a magnanimous act that you do not have to do. This is why altruism/kindness is sustained by thanks, because without these people would not go out of their way to help other individuals.

In contrast, cooperation forms a collective group that works together to devise and accomplish a *common task*. Each member is integrated into the group and is responsible for the group. For instance, parents feel responsible for caring for their children. We do not say that parents are altruistic toward their children; we say they are responsible for them as family members. Nor do we say that you are responsible to help the stranger whose car broke down.

Identifying cooperation with altruism, helpfulness, and compassion misleads away from the essence of cooperation. It reduces integral social relations of dependence and responsibility to individualistic acts toward unrelated individuals.

Cooperation, Sociality, Biology, Adaptation, Speciation

Socially forming a joint, social intentionality means that it is neither innate to the individual nor personally devised by the individual. Cooperation presupposes the absence of innate, natural, individual action tendencies so as to allow individuals to transcend their individuality in a truly social process of cooperation. Individual action tendencies would tie behavior to the individual and prevent socially devising intentions, objectives, desires, and ideas. Reducing the flexibility and sociality of cooperation to individual processes/mechanisms/tendencies would deprive people of the benefits of emergent social collectivities.

The freedom from innate, natural, fixed, individual action-tendencies is known by biologists as *neotony*. It means that we are undeveloped and underdetermined with regard to natural, physical, organismic, individual competencies. This is why humans require such a long time of post-natal maturity: we are not aided by natural tendencies; we must slowly acquire them through lived experience. And we must be supported while we acquire behavioral competencies. Neotony requires social cooperation to care for the young, and it requires that the young cooperate in order to participate in collective units that overcome their individual weaknesses and immaturity. (Animals mature very quickly. This minimizes social support during maturation).

Neotony must be, and must have historically been, a response to environmental pressures. These are the pressures of a cooperative social environment. That cooperative environment must have been initiated by adults to more efficiently acquire food and shelter. This adult environment exercised selective pressure to reduce biological, individual determination of behavior. Rudimentary cooperative adult society was also necessary to provide extended care of newborns. Without this, infants lacking innate behavioral schemas, would lack cooperative parents who could provide the extended care and instruction that infantile biology would have required; such infants would have died without cooperative parents.

Increased Neotony and cooperation ratcheted each other to higher levels.

Biology only provides general, abstract capacities to cooperate. It does not determine that concrete cooperation will occur. For biology to positively determine behavior would be an oxymoron, because biological determination would tie behavior to organismic mechanisms while cooperation is an exogenic social process. Where biology does determine behavior, as in the case of animals, especially low animals, and newborn humans, cooperation has no need to develop, nor can it develop because behavior is already programmed by the individual's internal, innate mechanisms.

Vygotsky (1994, p. 175) explained better than anyone that the natural determinants of evolution do not pertain to human evolution which is socially determined: "The struggle for existence and natural selection, the two driving forces of biological evolution within the animal world, lose their decisive importance as soon as we pass on to the historical development of man. New laws, which regulate the course of human history and which cover the entire process of the

material and mental development of human society, now take their place”. “The use and ‘invention’ of tools by anthropoid apes bring to an end the organic stage of behavioral development in the evolutionary sequence and prepare the way for a transition of all development to a new path, creating thereby the main psychological prerequisite of historical development of behavior” (Vygotsky and Luria 1993, p. 37, my emphasis, Ratner 1998, 2004).¹

With biological determinants of behavior having been displaced by social cooperation, human psychology is due to the latter, not the former. As Vygotsky said, “Voluntary attention emerges owing to the fact that the people who surround the child begin to use various stimuli and means to direct the child’s attention and subordinate it to their control...In and of itself, the organic, or natural, development of attention never could, and never will, lead to the emergence of voluntary attention” (Vygotsky 1981, pp. 193–194). Human psychology, thus has a social-cooperative basis, nature, and function (Wade 2011).

Cooperating with others turns our individual weaknesses into a collective, cooperative advantage. Contrary to popular opinion, cooperation is not a sacrifice of the individual that impairs his potential for fulfillment and freedom. Quite the opposite, the individual human is weak, immature, directionless, dependent, and incapable of fulfillment or freedom. It is only by cooperating with others that the individual gains strength, maturity, direction, support, stability, fulfillment, and freedom. And the human cooperative advantage provides us with far greater strength, maturity, direction, support, stability, fulfillment, and freedom than any non-cultural, or lesser-cultural, organism can muster. Cooperation is empowering and liberating, it is not stultifying of natural freedom. Dependency on others is a positive attribute, not a negative one as capitalist society construes it. For dependency can culminate in inter-dependence and dependability. Dependence is the impetus of our sociality which is our greatest advantage.

The cooperative socius is a social individual; it integrates the individual and the social; it is a Janus-faced figure that faces in both directions and makes each the other side of the other. It breaks down the separation between individual and society—though the conceptual distinction remains. Cooperation is far more convoluted than separate individuals “helping” each other. Team members are not separate individuals helping each other. They are members of a team who devise a framework of rules for themselves, and whose individual actions are structured by rules of the game, team plans for the game, and what the actions of their teammates are doing, will expectedly do, and make possible for them to do.

Cooperation leads to a collective of sociuses that is a supra-individual entity. Pooling individuals into a unitary collective body produces an emergent entity, or structure, that is a new order of reality. It operates according to distinctive principles and processes. It is irreducible to individual characteristics—and this is its superiority to the individual, or even a sequence/series of single individuals (Sawyer 2001, 2002, 2003a, b, c, 2004, 2005).

Cooperation is thus a new order of reality. It is a new kind of individual organism who is part of a new kind of social structure. We may say that *cooperation is a new kind of speciation*. Human development as a species was not

achieved by traditional evolutionary mechanisms, such as growing a new organ that can accomplish some physical survival task (e.g. growing long necks to reach food). Instead, humans enhanced their survival by adopting a completely different kind of adaptive mechanism—we created an unnatural social environment through which we developed socially organized behavior (social organizations) to deal with nature's challenges. Humans developed *social organs, or social processes* to survive in nature, instead of developing natural organs or natural processes. This makes the process of becoming a human species—known as speciation—as well as the nature or character of the human species qualitatively different from animals. It renders all analogies between human and animal behavior false. Human behavior is rooted in a fundamentally cultural environment whereas animal behavior is rooted in a fundamentally natural environment. Human behavior is primarily determined by social mechanisms whereas animal behavior is primarily determined by natural mechanisms. (Of course, human social behavior *involves* biological processes such as brain activity and breathing, but it is not *determined* by them the way that animal is. That is what allows humans to develop socially variable behavior very rapidly, while animal behavior changes slowly through natural processes such as genetic and anatomical changes.) Human psychology must be studied as social psychology, not as naturalistic psychology *determined by* natural mechanisms such as natural selection, genes, hormones, neurotransmitters.

It was the social environment that stimulated and selected for anatomical changes such as a larger brain cortex, an opposable thumb (to handle social artifacts/tools), and a mouth/teeth/jaw suitable to speech and to chewing socially cooked food. The advantages of constructing a social organization also exercised selective pressure against biological determinants of behavior that displace and oppose the social organization of behavior. For example, chimps are highly aggressive and often fight to the death, whereas early human hunters and gathers were generally amicable.

The social environment became humans' primary environment because it was so effective in dealing with nature. Humans turned their attention to the social organization of their behavior as their way of solving natural challenges. They no longer directly "adapted to nature," or "confronted nature"; they always turned to their own socially constructed environment as their mediated means for solving problems and meeting their needs. Cooperative behavior became so efficient at meeting nature's challenges, that humans could pay more attention to advancing their social organization than to solving natural problems. (This was possible because the social environment is artificial and changeable. It requires that humans acquire social skills to understand and change their social organization. We may confidently theorize that humans learned to change their social environment first, because it was under their control, and this inspired their imagination to change the natural world.) Humans discovered and used nuclear bombs, not as a direct natural response to a natural challenge, but as a social response to win social wars. Humans invented computers not to meet any natural challenge, but simply to conduct social activities more quickly. Chemical companies such as Dow and Monsanto did not invent genetically modified seeds and organisms in order to meet

the natural challenge to supply food. They invented these in order to control the food market and earn more profit. Humans do not eat french fried potatoes as an immediate natural response to a natural need, but entirely for social reasons.

Cooperation is so advantageous in solving natural challenges that it frees people, to a large extent (not entirely, of course) from nature's exigencies. For example, humans have been able to free ourselves from favorable natural niches, and we are free to populate the entire globe. Our nearest animal relatives, chimpanzees, are confined to living in narrowly favorable ecological conditions near the equator.

Humans are a cooperative, social species that makes us unlike any other species.

Cooperation, Culture, Civilization, Collectivism, Communalism

The adaptive advantage of cooperation is that it creates a social *environment*, or a social *world* of institutions, artifacts, and concepts. Interpersonal forms of micro behavior do not rise to this cultural level and do not provide the support and stimulation necessary for adaptive advantage. Interpersonal mutual aid could never enable humans to survive against the forces of nature. Only broader cultural formations and factors do. Cooperation must be thought of on the level of culture, civilization, collectivism, and communalism. Cooperation is one of "5 C's" that are inseparable and interdependent; they form a quintuple helix. This is the level on which cooperation originates and the function for which it originates. This is the thrust of Vygotsky and Luria's comments on social-historical processes. Cooperation is not merely an interpersonal act of helpfulness that constructs culture as a series of such acts (i.e., in bottom-up fashion). On the contrary, cooperation enables people to create culture as an emergent, powerful order whose institutions, artifacts, and concepts act in top-down fashion to structure individual, interpersonal behavior.

Human Nature and Cooperation

Cooperation presupposes a different kind of human nature than is commonly recognized. Cooperation requires a human being that is dependent, insufficient, weak, and limited, so that he can and must cooperate with others—to construct extra-individual, exogenic, emergent social formations—for his own survival and fulfillment. Sufficiency, strength, freedom, and control in humans must be socially constructed through cultural interdependence. They are an ideal, a telos, a work in progress; they are not naturally given to individuals in the way that animal competencies are. If the individual were self-sufficient, strong, independent, and free in himself, he would have no motivation to cooperate.

Human nature is abstract in the sense that it is the potential to develop rather than the determination of development. Human nature must be *actualized*, or *brought into existence*, through an act of social construction.

Unformed, malleable human nature means that we must cooperate and also that we can cooperate. Unfortunately, it does not mean that we will cooperate, as I explained in the Preface and Introduction. The actuality of cooperation depends upon the concrete organization of our cultural factors. We only realize our cooperative needs and possibilities insofar as we willfully organize cooperative macro cultural factors. We can decide to organize macro cultural factors competitively and individualistically, in which case we would not achieve actual cooperation. We are not preordained to achieve it through our nature. Our nature only endows us with the capacity to achieve concrete cooperation. Cooperation cannot be realized by teaching individual skills to people on the interpersonal level, without considering culture, civilization, and collective behavior.

Concrete cooperation is what makes man a “species being” in Marx’s (1844/1964, p. 126) words. Concrete cooperation, which is the subject of the remaining chapters of this book, draws people together as a species in common pursuits, concerns, and aid. Examples are cooperating for world health, pollution control, peace, international trade and finance, and worldwide sporting events such as the Olympics. Concrete cooperation enables humans to be cognizant of themselves as members of the human species. *Without concrete, extended cooperation, humans would not actually be a self-conscious species-being*. No other organism has this sense of itself as a species because no other organism has the capacity to concretely work together with joint intentionality and concern on common pursuits that affect the species.

Cooperation Stimulates and Supports Distinctively Human Psychological Processes

Cooperation requires that humans acquire a distinctive set of psychological capacities and competencies (Hill et al. 2011) that are necessary to construct collective ideas, goals, and norms. Cooperation stimulates, supports, and socializes specific psychological capacities and competencies; it does not simply utilize existing capacities for new ends. “These (distinctive psychological capacities and competencies) involve such things as the ability and motivation to form shared goals and intentions with others in collaborative activities, and the ability and motivation to share experience with others via joint attention, cooperative communication, and teaching. Skills and motivations of shared intentionality arose as part of a coevolutionary process in which humans evolved species-unique ways of operating, indeed cooperating, within their own self-built cultural worlds” (Tomasello 2010, p. 6).

Other competencies involved in cooperation are collective emotions, such as joy at a team’s success in scoring goals that I discussed above. Additional

competencies include following the line of regard indicated by pointing to something independent of the pointer and the observer; and the engagement function that allows infants to determine whether adults are engaged with them and whether adults are expected to act meaningfully with the environment (D'Entremont and Seamans 2007).

Tomasello explains that communication has a cooperative basis:

Human cooperative communications evolved first within the bounds of collaborative activities because these activities provided the needed common ground for establishing joint topics, and because they generated the cooperative motives that Grice established as essential if the inferential machinery is to work appropriately...Only some time after humans had developed means of cooperative communication within collaborative activities did they begin to communicate cooperatively outside of such activities...*Skills and motivations for cooperative communication coevolved with collaborative activities because such communication both depended on these activities and contributed to them by facilitating the coordination needed to construct a joint goal and differentiated roles* (Tomasello 2009, pp. 73–74, my emphasis).

Human language communicates specific information to others so that they all share common information. Animal utterances are spontaneous reactions by the individual to express its own state or emotion.

Virtually all animal communication, including that of great apes, involves one individual getting the other to do what he wants him to. The apparent exceptions are food calls and alarm calls. But, in recent interpretations, even these vocalizations are considered mainly self-serving. Thus, when chimpanzees find food they call so that they can have company while eating, as protection against predators, and when they spy a predator they vocalize as a way of recruiting allies for defense, or as a way of signaling the predator that he has been spotted. Importantly, these vocalizations are given even when the entire group is already there and so not in need of any information about the situation—so their function is not to inform. Listeners acquire information from signalers who do not, in the human sense, intend to provide it; and non human primates vocalize in response to important events, irrespective of how potential recipients may view the situation. Even when chimpanzees communicate with a human (e.g., by pointing), they are virtually always attempting to get him to do something for them, as are language-trained great apes (over 95 % imperatives in various studies).

In contrast, even from their earliest, prelinguistic attempts at intentional communication, human infants inform others of things helpfully. Thus, when 12-month-old infants see an adult searching for an object, if they know where it is they will direct her to it with a pointing gesture. Variations on this basic situation establish that the infants do not want the object for themselves (e.g. they quit pointing as soon as the adult has fetched it), and they are not just eager for the adult to perform an activity with the object (e.g. they point preferentially to objects whose location the adult is ignorant of). Cooperative informing comes naturally to even very young, prelinguistic human infants.

The overall point is that humans seem to have evolved a system of communication premised on cooperation, whereas other great apes have not. One possible explanation is that humans evolved this informative communicative function in the context of collaborative activities such as collaborative foraging—where helping the other typically helps us both toward our common goal—whereas chimpanzees do not engage in the appropriate kind of collaborative activities (Tomasello 2010, pp. 15–18).

Social cooperation spurred communication which, in turn, spurred symbolic meaning, which spurred symbolic thinking. The sequence is as follows:

Social cooperation requires precise communication with specific information value about things so that activity can be appropriately coordinated. This precision is achieved through symbols about particular things. It is the social interchange of information for cooperative behavior that requires that it be encoded in a form that can be transmitted. Animals lacking cooperative behavior, do not need social sharing of information and never develop a linguistic system for encoding and transmitting it. Symbols are therefore mechanisms of cooperation. Symbols incarnate the need for cooperation, they represent cooperation, they are products of cooperation (produced by people cooperating), and they instantiate cooperation—when several individuals adopt a social/collective symbol they are automatically coordinated and drawn together by virtue of using the common symbol to think, understand, and interpret in the same way. The social symbol that we use makes us social. We do not have to negotiate joint intentionality in every interaction because we already have it embedded in the social symbol that we use. Simply adopting a social symbol bestows joint intentionality on us because it is our common representation and understanding of our object. We can know another person, and they can know us, because each of us employs social symbols that are known to the other. Collective symbols therefore make the mind objective and public (*objektiver Geist*, in Hegel's and Dilthey's term). Thinking is not idiosyncratic and private since we use public, objective symbols as our thinking mechanism. If we employed idiosyncratic symbols with personal meanings, we could not understand each other or predict each other (Pezzulo 2011).

Paradoxically, social symbols allow us to utilize them privately and still be socially connected. We can compose music in our room using social symbols to represent musical tones, and we can then show our composition to others who will understand it. We do not have to compose the song in their presence because we can compose it using social symbols that they understand. Before humans invented symbols, they had to communicate directly to others through singing or gesturing in their presence. There was no way to store extended compositions which could be presented to other people at a later time. A song had to be sung in the presence of others to give it social presence. They could then remember it and sing it to other people directly. Social symbols enabled individuals to retain sociality in their private spaces. Privacy is permeated by sociality in the symbols that we use. Privacy does not escape sociality, it enacts sociality in a separate space.

Symbols are invented to convey information about things to individuals who do not experience those things directly. Symbols are artificial representations of those things that can be communicated. The social need to communicate information spurred the unique, awesome human capacity to represent objects and events in artificial forms. The first symbols were partial imitations of the objects and events: Bodily and facial gestures that mime distance, large or small numbers of things indicated by holding up fingers or spreading hands apart for more or less, tall or

short objects; sounds that mime sounds of animals. Symbols became more and more artificial as people became familiar with representing things symbolically. Imitative sounds became transformed into words; imitative sketches of things that were drawn on cave walls became transformed into written symbols that lost their imitative connection to things. The spoken and written word for bird have lost all physical resemblance to the bird they represent.

And this is a useful development: The more artificial the symbol, the more efficient it is to communicate. It is more efficient to write the word *bird* than it is to sketch a bird; it is more efficient to say the word *bird* than to imitate it in gestures by moving one's arms to imitate flying. One communicates more precisely about more things using symbols that do not physically imitate them, but which represent them abstractly. A verbal description of an event using words is far more precise than a sequence of gestural imitations of it. As the value of artificial symbols became appreciated, and as people became adept at inventing and understanding them, symbols became increasingly rarified into musical symbols, mathematical symbols, etc. All of this capacity to invent and decipher symbols is based in the social act of communication and cooperation.

Symbols convey information about reality so that people can make realistic decisions about things. We need symbols to tell us that animals or plants are in a certain location so that we can plan to go to that specific place and acquire food stuffs that we need. Symbols are not imaginary, subjective, idiosyncratic, playful images—i.e., a language game. The fact that symbols represent reality is the reason they are so powerful. We someone uses language to tell you that a tsunami is approaching, you respond to the symbol with fear and escape just as you do to the tsunami itself—because you know that the word symbol represents the tsunami. If symbols were imaginary, subjective images you would not become afraid and run when you heard about the tsunami.

Symbols represent things but they are not the things themselves. Therefore it is possible to use symbols disingenuously to misrepresent reality. We can use the linguistic symbol of a tsunami to fool people into thinking about reality and responding to this thought when no tsunami is approaching. However, the reason that people can be fooled is that they draw on their confirmed assumption that symbols are essentially realistic/objective. Without this assumption of realism, people would not react to symbols with urgency because symbols would be purely imaginary and/or idiosyncratic.²

The social symbols that constitute language become the means of thought. Thought rests upon language which rests upon social cooperation and coordination. Thought is thus a product of social activity. Research has demonstrated that thinking is impossible without social symbols, or language.

For instance, Spaepen et al. (2011) demonstrated that human language is indispensable for competencies such as numeracy. The authors examined the numerical abilities of individuals who lack a cultural language for number (deaf individuals who do not have access to a usable model for language, spoken or

signed) but who live in a numerate culture (Nicaragua) and thus have access to other aspects of culture that might foster the development of number. These deaf individuals develop their own gestures, called homesigns, to communicate. Homesigners use gestures to communicate about number. “However, they do not consistently extend the correct number of fingers when communicating about sets greater than three, nor do they always correctly match the number of items in one set to a target set when that target set is greater than three. Thus, even when situated in a numerate society, individuals who lack input from a conventional language do not spontaneously develop representations of large exact numerosities”. Homesigners were significantly less accurate on sets greater than three than both the unschooled hearing control subjects and the signing deaf control subjects (both $P < 0.001$); the two language groups did not differ from each other ($P = 0.174$) (pp. 3163, 3164).

An additional psychological phenomenon that is stimulated by cooperation is learning. Tomasello explains that human learning includes a distinctive feature, namely teaching. Human learning-by-teaching is necessary to preserve the stability of complex, powerful social norms that are unique to human life.

Human individuals live in a world in which the group expects them to conform to its particular conventions and social norms—or else! The result is a society structured by cooperatively created and enforced conventions and norms for how to behave as one of ‘us’, resulting ultimately in rule-governed social institutions. Diachronically, this cooperative way of living translates into established members of the group teaching things to youngsters and novitiates, who not only learn but actively conform. Teaching and conformity are main contributors to the stability of cultural practices in a group and—precisely because of this stability—to the unique ways in which human cultural practices ratchet up in complexity over historical time. The result is human artifacts and symbol systems with “histories”, so-called cumulative cultural evolution. (ibid., pp. 5–6).

Human cultural learning is different from chimps’ because humans also engage in teaching—whereas there is no evidence for systematic teaching in any great ape species. Teaching is especially important in the human case because of cultural conventions that cannot be invented on one’s own but only imitated (ibid., p. 28).

To elaborate, cultural factors are emergent, supra-individual, extended, complex phenomena; so they cannot be spontaneously experienced, created, or recreated by an individual (see Sawyer 2001, 2002, 2003a, b, c, 2004, 2005). This means that any individual who wants to acquire and master knowledge about a cultural phenomenon must have its cumulative cultural evolutionary history explained (instructed) to him by some authority—e.g., a teacher or a text book. Instruction is a social phenomenon that is required by complex, cumulative, sedimented social history of supra-individual cultural phenomena.

In contrast, animal life is little mediated by society; it primarily involves direct experience of individuals with nature. Consequently, there is little cumulative history and social norms that are unobtainable by the individual, and require teaching to impart comprehensive, common, stable knowledge.

Cooperation is Unique to Humans

Tomasello has demonstrated that humans have much deeper social connections than chimps. “Human children and fathers form strong bonds, as do siblings, which is not true in other great ape species” (Tomasello 2010, p. 15). Over the course of his entire life, a male chimp may know just 12 other males, all from his own group. But a hunter-gatherer, because of cooperation between bands, may interact with a thousand unrelated individuals in his tribe (Wade 2011, p. A3).

The proposal here is that nonhuman primate (and other animal) culture is essentially individualistic, or maybe even exploitative. That is to say, when a chimpanzee individual observes another using a tool and then learns something that facilitates her own use, she is simply gathering information that is useful to her—much as she might gather information from the inanimate world. The one being observed may not even know that the observer is gathering information from her actions.

In contrast, human culture and cultural transmission are fundamentally cooperative. Synchronically, humans engage in much more cooperative behavior in terms of such things as collaborative problem solving and cooperative (or even conventional) communication (Tomasello 2010, pp. 5–6).

Tomasello explains how uncooperative great apes are compared with young human children. While hunters and gathers forage for food collectively and share the fruits of their labor,

Great apes forage for food basically individually. They may travel in groups or small bands and sit together while eating—and may even vocalize upon finding food, which attracts others (perhaps as protection against predation)—but there are almost no habitual foraging activities in which great apes actively collaborate in the acquisition of food. Upon entering a patch of fruit, for example, individuals typically take a piece of fruit and then move away a certain distance from others to eat it. (This can be observed on a daily basis in captive settings in pretty much all great apes when highly desirable food is involved.) Some great apes are more tolerant than others in feeding contexts, perhaps especially bonobos, but even they do not actively share food often (Tomasello 2010, p. 7).

Another telling contrast between human and ape cooperation appears in the sharing of food between mothers and their children.

As foragers, chimpanzee youngsters are on their own, even somewhat in competition with their mothers. A recent study looked systematically at food sharing among three mother-infant pairs. Researchers recorded 84 attempts by the infant to get food from the mother; 50 of these were rejected [by the mother]. And more active transfers of food by the mothers were rare, occurring only 15 times. Tellingly, when mothers did transfer food to their children more actively it was always—100 % of the time—the less palatable part of the food they were eating. That is, the peeling the husk, or the shell (Tomasello 2010, p. 27).

Specific experimental comparisons between human children and young chimpanzees find clear differences in cooperation.

Even in very simple tasks with two parallel roles, such as two chimpanzees each pulling on their own rope to bring a heavy box of food within reach there is very

little coordination beyond each partner timing its activity to coincide with that of the other. Furthermore, in none of these scenarios is it clear whether coordination is achieved through the creation and maintenance of joint goals or through well-timed individual efforts. Neither naturalistic observations nor laboratory experiments have specifically addressed the question of whether chimpanzees can engage in cooperative activities involving shared intentionality. This is important for identifying the element of cooperation —i.e., whether joint intentionality exists versus acting simultaneously with others.

Another experiment tested problem solving with parallel social roles. It used a “tube-with-handles” task. The goal of this task was to retrieve a toy that is enclosed in a tube. The tube, which was 110 cm. long and 10 cm. across, with one handle on either side, could only be opened by two persons simultaneously pulling at both ends. The length of the tube made it impossible for children to grasp both handles at the same time. Behavior was coded according to the following categories:

No success Tube is not being opened.

Uncoordinated Success after more than 5 s of inappropriate actions such as standing on wrong side, letting tube drop more than once, individual play or individual attempts.

Coordinated Success, but some inappropriate actions, but not for more than 5 s; releasing handle not more than once.

Very coordinated Success after immediate understanding of their role. Child positions herself in correct location and performs the correct action without any mistakes.

Results 18 month old children were either unsuccessful or uncoordinated. 24 month olds ranged from uncoordinated to very coordinated, with the median lying between uncoordinated and coordinated. The ability to coordinate with the partner significantly improved between children at 18 and 24 months of age.

The most interesting finding was obtained during periods in which the programmed partner interrupted his activity:

When he refrained from cooperating, children of both age groups actively communicated to the adult in an obvious attempt to request his reengagement. This included pointing to the handle that he should grasp...This can be taken as evidence that the children comprehended their own and the partner's actions as interconnected parts of a joint activity toward a joint goal (joint intentions).

Children at 24 months of age were proficient co-operators. They were successful in all four types of task over a number of trials. They were skillful in spatial and temporal coordination of their actions with the partner in tasks with parallel and complementary roles (Warneken et al. 2006).

Chimps were given the same tasks as the children and their behavior was coded in the same categories. Although they were twice as old as the children, they manifested little cooperation. They seemed to pay little attention to their partner.

A major difference is that during the interruption periods, the chimpanzees never once attempted to reengage their recalcitrant partner, even in problem-

solving tasks with goals that the chimpanzees were motivated to achieve. During these periods, there were no communicative attempts of any kind; the chimpanzees simply disengaged from the task, made individual attempts to solve the task, or played with some part of the apparatus alone. This suggests that their goal was individual, not shared or social. Human children, in contrast, persisted in the social character of the problem-solving process, trying to reorient the partner toward the joint goal and his part in this joint enterprise.

Overall, the chimpanzees never gave the clear impression of engaging with both the task and the partner simultaneously. Unlike human children, the chimpanzees' playful interactions with their partner appeared almost exclusively dyadic in nature; this is consistent with naturalistic observations that only rarely find chimpanzees spontaneously engaging in triadic play involving another actor and a shared object.

Children seem to be motivated not just by the goal but by the cooperation itself. They engaged more spontaneously in all of the tasks, most especially in the social games whose primary goal was the interaction itself, whereas the chimpanzees had little interest in social games without a concrete goal. Children are more concerned with the social process rather than with what the process can achieve. Concern with the social process makes social life an object of attention. Children were so engaged socially that sometimes they even turned the tasks aimed at retrieving an object into a game (*ibid.*).³

In another experiment, chimps are faced with the choice of pulling in one of two boards, on each of which were two reward trays: one tray is accessible to the subject and one tray accessible to another individual in an adjoining cage. One of the boards contained one piece of food for the subject and none for the partner, whereas the other board contained one piece of food for each. Thus, the energy that a subject needed to expend was identical in the two cases, and the reward for the subject (one piece of food) was also unchanged. The question was whether the chimps would pull the board that would also deliver some food to the partner—at absolutely no cost to themselves. The answer is that they did not. They pulled indiscriminately...Researchers have shown that both 25-month olds and school-age children in a very similar paradigm select the equitable option more often than the selfish option (Tomasello 2009, pp. 22–23).

These results are interpreted as evidence for a uniquely human form of cooperative activity involving shared intentionality that emerges in the second year of life (Table 2.1).

Tomasello (*ibid.*, p. 23) summarizes the differences between human and chimpanzee cooperation:

Most psychologists and biologists are averse to contrasting human cooperation with animal's lack of cooperation. They either believe that animals can cooperate in ways that are similar to humans, or else they believe that humans are less cooperative than we have indicated, and that humans are individualistic like animals. These "levelers" of differences as I have called them (Ratner 2012) point to animal behavior that appears to be analogous to humans'. However, these analogies are always false because they are superficial and fail to identify important

Table 2.1 Chimpanzee and human social participations

	Chimpanzees	Human small-scale societies
Subsistence	Individual foraging	Cooperative foraging
	Sharing under harassment	Sharing spoils “fairly”
Economy	Biological markets	Cooperative markets
	Individual possession	Cooperative property
Child care and prosocial	Maternal child care	Cooperative childcare
	Reciprocal food sharing	Cooperative food sharing
Communication and teaching	Intentional communication	Cooperative communication
	No intentional teaching	Intentional teaching
Politics	Dominance	Cooperative power
	No third-party punishment	Cooperative enforcement
Norms and institutions	No mutual expectations	Social norms
	No institutions	Institution + status functions

differences (see Premack 2007 for examples). Tomasello (2009, pp. 61–62) presents an example of how seemingly cooperative behavior of chimps is really a series of individual acts. The example is group hunting:

The hunt commences when one male begins chasing a monkey through the trees, with the understanding that fellow chimpanzees, who are necessary for success, are in the area. Each other chimp then takes, in turn, the most opportune spatial position still available at any given moment in the emerging hunt. The second chimp blocks the fleeing monkey, the third goes to a plausible other escape route, others stay on the ground in case the monkey drops down. In this process, each participant is attempting to maximize its own chances of catching the prey, without any prior joint goal or plan or assignment of roles. This kind of hunting event clearly is a group activity of some complexity in which individuals are mutually responsive to one another’s spatial position as they encircle the prey. But wolves and lions do something very similar, and most researchers do not attribute to them any kind of joint goals or plans. The apes are engaged in a group activity in I-mode, not in We-mode. As opposed to the chimpanzees’ group activity in I-mode, human children, from soon after their first birthdays, work in we-mode, forming a joint goal with their partner (see Tomasello 2010, pp. 25–27 for additional examples).

Premack explains how teaching, which we discussed above, does not really occur in animals despite superficial appearances.

Some animals are said to teach. For instance, a cat injures mice, and then brings the injured mice to her kittens, which learn to stalk and kill them. The actions of the cat are adaptations and, like all adaptations, have a single target, in this case, eating or stalking. In fact, eating (or stalking) is virtually the only activity that any animals teach. Because most animals eat ordinary diets (i.e., natural ones) they do not teach.

Human teaching consists of three distinct actions: observation, judgement, and modification. A teacher observes the novice, judges his actions or products, and modifies them when they fall short of her standards. The human recognizes that the young are incompetent and therefore need to be taught; has the technology with which to teach; and is motivated to teach by deeply rooted aesthetic standards. Each of these actions has a distinct cognitive source. The recognition that competence develops with age humans owe to their theory of mind: It enables them to both differentiate the mental conditions of other

individuals, and to analyze the factors, such as age, intelligence, experience, etc., that cause the differences.

The human motivation to teach is largely aesthetic. A parent has a conception of a proper act or product and dislikes the appearance of an improper one. The evidence for such standards is twofold. First, humans “practice” e.g. swing a golf club repeatedly, flip an omelet, sing a song, write a poem, etc., trying to improve their performance of a chosen activity. Second, humans seek to improve their appearance. The mirror is where they begin their day, combing their hair, applying makeup, etc.

That humans have mental representations of preferred actions or appearances is suggested not only by the demands they make on themselves but by the corrections they make of children when teaching them. Teaching, the attempt to correct others, is the social side of the attempt to correct self (Premack 2007, pp. 13861–13862).

Examining the details of psychology/behavior dispels superficial behavioral resemblances between humans and animals.

Chimpanzee mothers do not recognize that their infants lack knowledge and cannot therefore, for example, crack nuts with rocks. Therefore, they do not teach them. Chimpanzees do not have the concept of knowledge, do not distinguish a knowing individual from an ignorant one, and do not attribute the mental state of knowing, perception, and intention being the only mental states they attribute (ibid., 13865).

The Social Ontogeny of Cooperation

Brownell et al. (2006) and Brownell (2011) studied the ontogenetic development of cooperation in children. One- and two-year-old peer dyads were presented with a simple cooperative task. Age differences were found in amount of coordinated activity, monitoring the peer’s activity and location in relation to the goal, and attempting to achieve the goal when the peer was (or was not) available as a partner. One-year olds’ coordinated actions appeared more coincidental than cooperative whereas older children appeared to be more actively cooperating toward a shared goal. Differences in coordinated activity with peers were associated with differences in attention sharing with an adult and with language about self and other. The ability to cooperate with peers, becoming a true social partner, develops over the 2nd and 3rd years of life in concert with growing social understanding.

In the 2nd year of life, children begin to move out of the exclusivity of adult–child relationships into the larger, novel world of peers. Before 18 months, peer interactions are rare, primitive, and minimally coordinated, even though children exhibit social interest in one another as early as 6 months of age. Research has found a dramatic increase between 20 and 24 months of age in spontaneous, novel cooperative activity between unfamiliar toddler peers. Thus, peer cooperation appears to emerge at the end of the 2nd year of life. During the 3rd year, children’s cooperative play becomes more responsive to their peer’s actions and desires, and they actively influence one another’s behavior and goals. For example, between 27 and 40 months children are more likely to take their peer’s desires or needs into account, such as offering or sharing toys that the peer actually wants;

they also produce more other-focused speech during peer play and cooperation, such as asking or telling the peer to do something.

Primitive forms of coordinated activity among 1-year olds consist of similar but independent actions performed at the same time toward a common goal such as acting together on the same toy. A higher form of cooperation then progresses to spatially and temporally coordinated cooperative behavior in 2-year olds based on a shared goal. Complex coordinations of roles and behavioral timing with multiple shared goals emerge still later among 3-year olds and indicate explicit collaboration (ibid.).

Earlier we saw that cooperation entails cooperators realizing their common goal and feeling a joint satisfaction that all have reached it. (Cooperative, collective emotions are as necessary to cooperation as cooperative, collective intentions). The socius is vested in helping co-operators achieve the same goal and feeling the same pride and enjoyment as it does. This means that the socius will continue working on the joint goal to ensure joint success and joint happiness, even if the socius herself has completed her own portion of the activity. Hamann et al. (2012) designed an experiment to test children's developmental capacity to do this. They designed a task in which two children collaborated, but then the reward for one became available before the reward for the other. For the second child to receive her benefit from the collaboration, the first child had to continue collaborating even after she had received her own benefit from the joint activity. A crucial element was whether the first child collaborated with the second before she played with her own reward (called the immediate condition) or whether she played with her own reward first (the delayed condition). This difference is important because immediately helping the second child indicates that the first felt a strong sense of cooperation and collective satisfaction. It indicates the first child would not get satisfaction with her own reward until the second also obtained her reward. Delayed collaboration indicates that the first child could experience satisfaction at obtaining her reward before the second had obtained hers. Delayed collaboration would indicate more an altruistic desire to help the partner obtain her own reward and her own satisfaction, rather than the first child feeling a joint goal and satisfaction that could only be achieved by both obtaining their rewards.

Results of the experiment were that 3.5-year-old children (male and female) almost always provided support to their partner (98 % of the time). Importantly, they did so immediately (without playing with their rewards first) 76 % of the time, thereby demonstrating that they wanted the other child to receive its share in order for the first to feel satisfied with its own. The 2.5-year olds provided support only 26 % of the time, with immediate support 7 %. Importantly, subjects' collaboration with their partner was not dependent upon the latter's request for help after she saw the first child receive a reward. Most of the collaboration was offered without partner's request for help. Clearly, 3-year olds feel greater sense of unity around collaborative activities and common emotions with their partners than 2-year olds do. Cooperation thus develops significantly between the second and third year.

While cooperation develops ontogenetically, it is not a natural unfolding of an innate tendency. Rather, its development is elicited by social interaction with adults.

Parents draw their young infants into face-to-face interactive exchange, structuring and scaffolding social participation with an especially socially responsive infant in a dyadic “dance” that includes motor action, gazing, cooing, touching, and smiling along with other facial expressions. Within this context infants become progressively tuned to the timing and structure of dyadic exchange. Gradually, over several months, they come to anticipate and predict the partner’s affect and behavior in face-to-face dyadic activity. At the same time they learn how to coordinate and alternate their own attention, affect, vocalization, and motor action with responsive adult partners across an increasing variety of interactive contexts. Eventually, infants begin themselves to initiate joint action with adults and to respond in unique ways when adults violate their expectations for participation in the joint activity. It was not until 18 months of age that every infant participated in at least one episode of ‘coordinated joint engagement’ in which the infant was an active participant in the interaction rather than being passively led by the mother’s actions (Brownell 2011, pp. 196–198).

Toddlers’ understanding of others’ behavior and internal states is associated with their mothers’ talk about the children’s own goals in response to the children’s requests. Linguistic development also relates to emerging social interaction and understanding. Personal pronoun comprehension and use reflects an understanding of the complementary and reversible relation between self and other. Moreover, in children’s early cooperative play with adults, the adult partner structures and supports the interaction, establishing and defining the joint goal or discerning the child’s goal and intentions and accommodating behavior accordingly. By uniquely timing and adjusting their behavior to the immaturities in children’s social skill and social understanding, adults help children integrate their own intentions with the adults’ intentions to achieve goals jointly.

No human could do any of the complex things they do with a biological predisposition alone; that is to say, no human could invent any of the complex cognitive practices and products of the species without a pre-existing cultural world within which to grow and learn. A biologically intact human child born outside of any human culture—with no one to imitate, no one to teach her things, no language, no pre-existing tools and practices, no symbol systems, no institutions, and so forth—also would not develop normal social-cognitive skills (Tomasello 2010, p. 37)

The Relevance of Abstract Cooperative Capacity to Concrete Cooperation

This chapter has articulated

- a general concept of what cooperation means, what kind of social-psychological relationship it is, how it relates to individuality, fulfillment, freedom, civilization, and humanness
- the social and psychological competencies that cooperation promotes

- benefits that result from cooperation
- the competencies that must be developed in order to actualize cooperation
- how cooperation develops in children to arrive at the general social-psychological relationships mentioned in the first point
- how the ontogeny of cooperation does not naturally unfold in individuals, but rather requires social stimulation, support, and guidance.

An important conclusion that emerges from this material is that general aspects of cooperation are uninformative about concrete cooperation, and do not generate it or explain it. Concrete cooperation must be grounded in all the foregoing aspects of general cooperation; it must utilize the general concept of what cooperation means, the kind of social-psychological relationship it is, how it relates to individuality, fulfillment, freedom, civilization, and humanness. However, concrete cooperation must realize all of these aspects in concrete, cultural-historical-political form that grows out of existing social conditions. Concrete cooperation is a cultural-historical-political phenomenon that requires a sociological (macro cultural) analysis of what form it must take to overcome its concrete cultural-historical-political obstacles, and what *praxis* is required to institutionalize it as the basis of a new social organization—of owning, managing, and distributing services and resources.

Abstract cooperation is necessary but not sufficient for enacting concrete cooperation. Humans can cooperate and should cooperate (i.e., would benefit from it) but that does not mean they will cooperate. Concrete cooperation cannot be derived from abstract, general psychological processes—any more than concrete cognitive operations such as computer programming can be derived from abstract, general cognitive processes such as episodic memory. Tomasello (2010, p. 43) correctly states, “Human cognitive and motivational adaptations for culture are simply psychological enabling conditions for the generation and maintenance of the specific cultural artifacts and practices created by specific cultural groups”.

Correctly understood, the general aspects of cooperation that are rooted in human evolution lead to exploring concrete aspects that are rooted in cultural processes. This is the logic that informs this book. Where this chapter has explored the general aspects of cooperation that are rooted in human evolution, the remainder of the book explores concrete aspects of cooperation that are rooted in cultural processes.

Before we proceed on our way, we must forestall an objection to our approach that biases people against it. The objection is that abstract, natural aspects of cooperation are, in fact, sufficient to explain cooperation and that there is no need to explore concrete, cultural-political aspects. This is the approach that most psychologists take to cooperation, and to psychology in general. If it were true, then it would render the remainder of this book superfluous. To justify exploring concrete aspects of cooperation, we must dispel the attempt to reduce it to abstract processes and features.

Ahistorical, Acultural Accounts of Cooperation and Selfishness

In the Introduction, I explained why abstract features of cooperation are insufficient to explain or produce concrete features. Abstract features of cooperation can even be utilized to produce uncooperative behavior such as war. Most psychologists fail to realize this simple point. They remain wedded to treating abstract features as sufficient for explaining actual, lived cooperation. To correct this error it will be instructive to analyze a few of their specific statements. Mainstream psychologists offer two complimentary abstract arguments about cooperation. One is that cooperation is unnatural and unrealizable because human nature is inherently selfish. The other argument is that cooperation is natural because human nature is intrinsically cooperative. The first argument makes cooperation impossible, the second makes it inevitable or facile. Both are wrong. Both render concrete cultural-political action to implement cooperation irrelevant. Construing human nature as selfish renders cooperative action futile and utopian; construing human nature as inherently cooperative renders cooperative action unnecessary because we are already cooperative. I shall demonstrate that cooperation and anti-cooperation are both cultural; this means that achieving cooperation is possible and necessary, neither impossible nor inevitable.

Ahistorical, Acultural Accounts of Selfishness

Most accounts of selfishness and its ensuing social problems explain them in terms of natural, psychological, or individual mechanisms.

For example, Sussman and Cloninger (2011) say, “From a neuropsychiatric perspective, selfish and uncooperative behaviors are signs of mental dysfunction because they are strongly associated with life dissatisfaction and ill health. From an evolutionary perspective, antisocial behavior in human beings is the unregulated expression of primitive impulses because it is a consequence of the failure of the human capacity for apperception of unity” (Sussman and Cloninger 2011, p. 63). The authors ground uncooperative behavior in primitive impulses and a psychological failure to perceive unity.

The authors cannot explain why these primitive impulses did not dominate the behavior of primitive humans, who instead acted cooperatively for the most part. Paradoxically, anti-social individuals formed a critical mass in the seventeenth century whereupon they proceeded to develop a world capitalist system that decimated the pro-social behavior of primitive humans. The authors have no explanation for why this change occurred at that particular time. Why did these impulsive, defective individuals not appear, or reach a critical mass, in the eleventh century, or for the first 90 % of human history before 10,000 years ago?

(See Fromm 1973 and Ratner 2006, for a cultural-historical analysis of aggression/selfishness that answers these questions).

The authors contradict their own psychological explanation of anti-social behavior. They state that “modern human beings have the potential for stable self-aware perception of a sense of unity in all aspects of life, manifest by emergent capacities for harmony, sublimation, aesthetics, science, spirituality, humor, and inventiveness” (ibid., p. 95). These psychological capacities are supposed to generate pro-social behavior, yet they generate selfish behavior and conflict in the capitalist world system of modern times. The authors never explain why modern humans (who are never delineated in terms of historical dates or societies) have this potential for a sense of unity that is fundamental to cooperation. And if they have this sense of unity, why do they not pursue it and act cooperatively? And since modern people do not practice unity, cooperation, and suppression of selfishness, despite having the capacity to practice them, what will make them act cooperatively? How are we to use this sociobiological theory to actualize the potential for cooperation that we have? What programs will help in this regard, where other attempts at cooperation among modern people have failed? These are the conundrums that psychologists face when they refuse to consider the difference between abstract and concrete psychology, and when they refuse to consider culture, history, and politics as central to human psychology/behavior.

Evolutionary, sociobiological theory leads to the conclusion that cooperation is enhanced by strengthening peoples’ perception of unity which will enable them to suppress primitive competitive impulses. Evidently, cooperation can be achieved without knowing anything about the dynamics of capitalism and how these could be restructured along the lines of cooperative socio-economic principles and practices. A sense of unity replaces political-economic knowledge and action. This, of course, is absurd psychologizing.

First of all, a vague sense of unity is not the basis of cooperation. As I have explained, cooperation is a particular social relation that is spawned by a practical urge to form a collective plan, objective, and mode of behavior. One must become a new kind of collective individual, not simply “have a sense of unity about things”. To be implemented concretely, cooperation requires deep knowledge of capitalist obstacles, as well as the history of efforts by co-ops and their successes and failures. Cooperation also requires serious, bitter struggle against capitalist opposition to social responsibility.

The authors are also wrong to believe that anti-cooperative capitalists lack a sense of unity about things. Capitalists actually have a very clear, broad sense of unity. ExxonMobil Oil company, for example, is an empire with tentacles throughout all sectors of the world. Coll (2012) describes this in his excellent book *Private Empire: ExxonMobil and American Power*. He documents that upper managers regard ExxonMobil as an empire and consciously seek to extend and organize it as such. Upper managers have a clear sense of oil reserves, oil extraction and transportation, physical–chemical aspects of oil, oil pricing, foreign governments with whom they must curry favor in order to obtain favorable terms, domestic governments they must influence through money and through appointed

personnel in charge of regulatory bureaus, banks and financing, the stock market, pollution regulations they must defeat or circumvent, and even the science of climatology they must discredit. ExxonMobil managers have a vast sense of the interconnections of these diverse things. Coll mentions that Indonesian militants protested one of ExxonMobil's projects in their country, and the company's managers used personal connections with the Bush administration to have it threaten the militants by designating them a terrorist group. The militants ceased protesting against ExxonMobil. ExxonMobil's managers manifested a great sense of unity among oil production, geopolitics in Indonesia, the Bush administration, and readying the U.S. military to attack insurgent militants.

The problem is that capitalists use this sophisticated sense of unity for selfish and destructive purposes. This is exactly my point about abstract cooperative mentality being used for concrete anti-cooperative purposes.

Sussman and Clonger attack the abstract level of consciousness (a "lack of sense of unity among things") when they should attack the concrete practices of capitalism. And they seek to enhance cooperation by advocating a sense of unity among things when they should articulate concrete socio-economic-political alternatives to capitalism.

Ahistorical, Acultural Accounts of Cooperation

Most explanations of cooperation ignore macro cultural bases of cooperation and attribute it instead to natural, individual psychological mechanisms. For instance, De Wall (2008, p. 285) states that genuine altruism and cooperation require taking the perspective of the other and understanding his mental state. De Wall notes that this is different from simply resonating with another's behavior and intentions. De Wall explains the evolution of genuine perspective-taking as follows: "For an individual to move beyond being sensitive to others toward an explicit other-orientation requires a shift in perspective. The emotional state induced in oneself by the other now needs to be attributed to the other instead of the self. A heightened self-identity allows a subject to relate to the object's emotional state without losing sight of the actual source of this state". According to De Wall, the pivotal explanatory construct in evolving from sensitivity to others to understanding (empathizing with) them is the development of self-identity. One psychological construct—identity—is taken to explain another psychological construct—empathy. Culture never enters this psychological system. De Wall never emphasizes cultural processes in psychological evolution/development of self-identity, empathy, or cooperation. He never mentions how empathy is called for and selected for by macro cultural activities and needs such as organizing a hunting expedition or a farm or a clinic or a governing council, or a workshop or a laboratory, or building a school or a church.

Rather, De Wall (2008, p. 282) states "The selection pressure to evolve rapid emotional connectedness (i.e., empathy) likely started in the context of parental

care long before our species evolved. Signaling their state through smiling and crying, human infants urge their caregiver to come into action. Equivalent mechanisms operate in all animals in which reproduction relies on feeding, cleaning, and warming of the young. Avian or mammalian parents alert to and affected by their offspring's needs likely out-reproduced those who remained indifferent. Once the empathic capacity existed, it could be applied outside the rearing context and play a role in the wider network of social relationships".

This is an ahistorical, a cultural explanation that typifies the field of psychology. De Wall attributes empathy to the natural call by animal infants for their parents to feed, clean, and protect them. Animal parents supposedly respond to this natural call by developing empathy. Empathy thus emerges from micro level interactions (e.g., between a mother and her offspring) of human infants and animal infants. Its origins have nothing to do with humans in particular, and it has no roots in cultural activities, institutions and artifacts (such as organizing a hunting party, governing council, educational group, etc.).⁴

But if cooperative pro-social behavior springs from empathy, and empathy is rooted in parental care of offspring in animals, then why do not animals practice cooperation? And why is concrete cooperation rare in modern humans who all were cared for by caregivers? And why does concrete cooperate vary over history when parental care for offspring is universal and constant? Psychologicistic explanations of psychology can never answer these questions.

De Wall's account epitomizes the erroneous reductionistic model where primitive, animalistic, natural, automatic/mechanical, survivalist, individual, simple, infantile mechanisms are misconstrued as the basis of advanced, complex, adult, collective, macro, cultural, intentional human behavior/psychology.

The problem with reductionism is that lower mechanisms cannot explain higher phenomena. There is no resemblance between "the empathy" of a bird that instinctively brings food to its baby and a human contributing money to an environmental organization. There is no resemblance between "the commiseration" of an ape that gently touches a nearby group member who has visibly suffered some misfortune, and the outpouring of grief that people around the world felt for Steve Jobs dying of cancer. These people never met Jobs, and only knew of him through a medium of abstract symbols (words and photos) and artifacts that he helped to design. No ape could feel sad from hearing his handler say that another ape half way around the world, who had accomplished some amazing technical feat, had died of cancer. The operating mechanisms of human emotions are not analogous to the mechanisms of ape emotions.

Psychological and reductionistic analyses of behavior are not only scientifically wrong, they are practically and politically inadequate as well. They distract from social analysis and critique, and from political action to transform the social structure. They direct people to enhance cooperation by psychological interventions such as fostering empathy or a sense of unity. But this makes no sense because people already are empathic as a result of being cared for by caregivers. Yet this obviously does not generate cooperation, any more than modern man's supposed sense of unity does.

Now that we have dispelled the twin errors of the unnaturalness and impossibility of cooperation (because human nature is selfish), and the naturalness and inevitability of cooperation (because human nature is cooperative), we are justified in exploring the concrete cultural-political factors that are necessary for generating cooperation vis a vis the cultural factors that impede it. I commence with a discussion of concrete cooperation in pre-capitalist societies and how it was systematically decimated by the capitalist system. Reclaiming cooperation thus requires a further social transformation that institutes new cultural factors that promote cooperation in a modern form. Subsequent chapters explain how people have attempted to effect this kind of social transformation. Their successes and shortcomings are analyzed in order to advance the former and overcome the latter.

End Notes

1. The major phylogenetic changes in the human organism have not been in physical organs that enhance individual prowess (e.g. strength, speed, camouflage, sensory acuity—vision, and hearing). Instead, new human organs facilitate cultural activities such as speech (vocal chords, jaw, tongue, and teeth), thinking (the neocortex), the use of tools (opposable thumb), and small teeth that are suitable for eating food from (the cultural activity) cooking. Importantly, the organs produced by human evolution are general purpose organs which are capable of flexible use that can be decided by the organism as conditions change and as group needs change. Human psychological organs are not designated for specific tasks. Whereas a bird's beak is specifically designated to break and hold particular foods (e.g., certain sized seeds), the human hand is designed for holding any kind of tool to accomplish any purpose (from eating to building a house). Where animal vocal chords, tongue, and mouth are specifically designed to produce certain kinds of characteristic sounds, human vocal chords, tongue, and mouth are flexible enough to speak any kind of language. The human neocortex is similarly a general purpose organ that is dominated by association centers which synthesize information. (Ratner 2006, 2012a).

2. All illusions work because they violate people's realistic assumptions that have been empirically confirmed in past experience.

3. Children also become invested in promulgating social norms to others. Three-year-olds were shown how to play a one-player game.

When a puppet later entered and announced that it too, would play the game, but then did so in a different way, most of the children objected, sometimes vociferously. The children's language when they objected demonstrated clearly that they were not just expressing their personal displeasure at a deviation. They made generic normative declarations like, "It doesn't work like that," "One can't do that," and so forth. They do not merely disapprove of the puppet playing the game differently; he is playing it improperly. This behavior is of critical importance, as it is one thing to follow a norm and it is quite another to legislate the norm when not involved oneself.

The children had only to see the adult demonstrate the game—in a straightforward way with no normative judgments of language—before they jumped to normative conclusions about how the game *should* be played (Tomasello 2010, pp. 37–38).

This is a telling description that demonstrates that young children actively become social agents who have a sense of shared intentionality, promulgate social norms as important to obey, and castigate violations of it. They do not invent idiosyncratic, personal meanings about social

behavior, as many “micro cultural” psychologists claim (Ratner 2012a). Because social cooperation is humans’ adaptive mechanism that produces their survival and fulfillment, individuals have a vested interest in maintaining the cooperative social process. Humans are distinctively attentive to social processes because we depend on them for our survival and fulfillment. Humans must be concerned with maintaining social norms to achieve stable, regular, predictable, dependable social interactions which are the foundation of our survival and fulfillment. Animals which function primarily on an individual level have no need, or ability, to attend to, and preserve, social norms, and processes.

4. All evolutionary psychology falls into these reductionistic errors. All variants assume that cooperation arises from some individual capacity that is genetically prepared. Genes only operate on individuals to generate individual behavior, so this is the level at which evolutionary psychology operates. Evolutionary psychologists do not recognize—cannot recognize—that cooperation arises from the advantage of constructing particular socially organized macro level institutional norms. What is key to cooperation is the forming of macro cultural factors that entail collective forms of ownership and distribution of resources, certain forms of decision making, certain legal rights and obligations, and sanctions. None of these can have any genetic-evolutionary basis. They all must be socially constructed. Thus, the search for cooperation in individual biological processes is wrong-headed. It cannot explain the basic social problem of why humans, who have all the biologically evolved individual capacities for culture and cooperation, have failed to achieve real cooperation on the societal level. Clearly, individual cognitive capacities do not automatically generate cooperative social institutions.

Individual cognitive capacities are necessary but not sufficient for cooperation. Individuals make culture and cooperation, however, not as individuals on an individual or inter-individual level. Similarly, biology processes cultural behavior but does not program it. The fact that individuals and biology are involved in culture, cooperation, and psychology does not mean that the latter are essentially biological or individual phenomena that are explainable by biological or individual mechanisms. Individuals and biology are taken up in emergent phenomena. Evolutionary psychology and biology seek to essentially bring emergent cultural phenomena back down to individual and biological mechanisms, or explanatory constructs.

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