3. Evolutionary-Anthropological Foundations of Human Differentiation

3.1 Introductory Thoughts

This section examines the evolutionary-anthropological foundations that shape human behavior and social structures. It is imperative to integrate evolutionary-anthropological insights in order to gain a more profound comprehension of the fundamental mechanisms that drive the formation and sustenance of social differences and dominance within human differentiation practices. This interdisciplinary approach provides a comprehensive framework for examining the fundamental behaviors that drive group formation, the consolidation of social systems, and the narratives that perpetuate existing social orders. These behaviors, which are deeply embedded in our evolutionary past, influence our susceptibility to group dynamics; however, they do not predetermine our actions. These dynamics will be examined in greater detail later in this work, particularly through the lens of holistically conceptualized schemas. It is of considerable significance to engage with these insights, particularly from a social science perspective. While maintaining a critical stance towards deterministic and universalistic interpretations, this discussion enhances our understanding of human group behavior and system justification. Such discussions provide the basis for a more nuanced comprehension of the complex interplay of social dynamics involved in human differentiation practices.

This section addresses the challenge of synthesizing transdisciplinary perspectives that encompass both the evolutionary origins and the cultural plasticity of human behaviors. Concurrently, this methodology may be susceptible to oversimplification and potentially misleading interpretations, which may unintentionally mirror the shortcomings of social Darwinism and genetic-biological reductionism. These flawed interpretations have historically been employed to justify inequality and dominance. It is therefore essential to acknowledge that genetic predispositions and biological constants do not inevitably determine specific social or cultural patterns. The naturalistic fallacy, which erroneously deduces ethical or social imperatives from biological facts—that is, it equates "is" with "ought" or natural states with social norms—illustrates the fallacy of directly transforming biological

conditions into social norms without acknowledging the complex socio-cultural dynamics involved. It is therefore important to refrain from the uncritical transfer of evolutionary findings to present-day human social dynamics. The uncritical application of evolutionary theories in social analysis carries the risk of misrepresenting social hierarchies and global power disparities as natural phenomena. The concept of progress, as espoused by Herbert Spencer and Charles Darwin, has historically been employed to justify the moral superiority of certain groups. This ideological foundation provided the basis for the imperialist and colonialist perspectives that were prevalent during the Victorian era and continued to inform the doctrines of fascist and National Socialist ideologies. These perspectives espoused a deterministic view of human evolutionary development, known as unilinear evolutionism, which failed to take into account the harsh realities of colonial violence and exploitation. The application of biological-evolutionary models in human social contexts frequently results in the promotion of an idealized "natural order" wherein social underclasses are perceived as inherently deficient. This perception leads to the view that welfare support is a catalyst for dependency rather than empowerment. In the name of social Darwinism, progress is presented as an inevitable consequence of relentless competition, thereby legitimizing the existing socio-economic hierarchies and inequalities as natural phenomena. These perspectives have historically provided a rationale for significant social injustices and continue to inform contemporary discourses on "developed" and "underdeveloped" societies, despite mounting scrutiny and critique of these terms. The integration of systems theory perspectives provides a more comprehensive understanding of the dynamics and structures that influence such differentiation processes. Consequently, societies are conceptualized as intricate, self-organizing systems, distinguished not by linear or unidirectional causal relationships, but by a complex network of interactions and interdependencies that shape their social phenomena. This approach rejects the notion of simplistic causal interpretations, instead acknowledging that social hierarchies and power inequalities do not stem from an inherent "natural order," but rather emerge from the intricate dynamics within social systems (see Chapter 2). By prioritizing self-organization and emergence, it facilitates the integration of insights from evolutionary anthropology into the examination of the dynamics and structure of societies. This theoretical stance emphasizes the manner in which genetic and evolutionary predispositions are shaped and influenced by sociocultural and systemic factors. It challenges the notion that social or cultural outcomes are directly produced by deterministic biological processes. The transdisciplinary perspective presented here, which unites evolutionary-anthropological insights with a broader social analysis, offers a nuanced understanding of the genesis, evolution, and potential transformation of social orders (further discussed in Chapter 7, "Macrosocial Anthropological Constants"). The intricate nature of human social structures must be acknowledged, and the simplistic tendency to

apply reductionist evolutionary models to the complex phenomenon of human coexistence must be avoided. Conversely, a comprehensive rejection of scientific insights into human differentiation as mere social constructs can result in equally flawed interpretations of phenomena such as discrimination and differentiation. This point is particularly pertinent in relation to the forthcoming discussions on schemata, which are inextricably linked to human cognition and neurobiology, as detailed in subsequent chapters. These schemata are activated by cultural codes and practices that elicit emotional responses, which people often find difficult to resist and typically conform to reflexively. This discussion will examine such cultural codes in greater depth, with a particular focus on the context of power politics. This investigation will examine the strategic linking of fears, resentments, disgust, and threats to certain groups constructed by society. The influence of these emotional responses, elicited through cultural coding, can be attributed to their foundation in automatisms that are rooted in both evolutionary and biological factors. In light of the presented system-theoretical metaframe, the debate over whether biology influences culture or vice versa becomes a relatively secondary issue, given that systems are always structurally coupled with their environments. It is of greater consequence to deliberately incorporate specific findings into a transdisciplinary understanding of human differentiation practices, eschewing circular debates or the reluctance to explore beyond one's disciplinary boundaries. A critical yet open approach to human differentiation practices necessitates a balance between acknowledging our evolutionary predispositions and emphasizing our capacity for cultural innovation and ethical behavior. By integrating insights from evolutionary anthropology and neurobiology in a conscious manner, a comprehensive and nuanced understanding of human social complexities, particularly in relation to group behavior, can be achieved. This knowledge not only elucidates the nuances of social practices but also cultivates an understanding of how these practices can be transformed and shaped to address social challenges and foster a more inclusive and equitable coexistence.

3.2 The Emergence of Human Cultures in the Evolutionary Process

The appearance of Homo sapiens represents a significant landmark in the evolutionary history of the hominid species. Approximately 300,000 years ago, anatomically modern humans (Homo sapiens sapiens) evolved from a lineage of earlier hominids. This period saw the advent of unparalleled developments in the realms of cognition, social organization, and cultural expression, thereby establishing Homo sapiens as a uniquely advanced species within the natural world (Shea 2023, 291). The process of *enculturation*, as conceptualized within the framework of Dual Inheritance Theory, identifies the concomitant evolution of biological and cultural charac-

teristics that differentiate humans from their evolutionary precursors. This theory postulates that humans are shaped by a dual inheritance, comprising both genetic evolution and cultural developments. This integration of biology and culture is fundamental to an understanding of the distinctive evolutionary trajectory of Homo sapiens, which distinguishes them from earlier hominid species (Boyd and Richerson 1985; L. Cavalli-Sforza and Feldman 2020). Although the australopithecines, who lived approximately 4.5 to 2.5 million years ago, engaged in rudimentary cultural activities such as tool use and hunting, the evolution of Homo sapiens exemplifies the profound interconnection between cultural and biological development. In contrast to their forebears, humans are not constrained by a fixed set of inherited concepts or deterministic structures. Alternatively, humans are endowed with an inherent capacity for the evolution of sophisticated systems. This intricate tapestry of biological and cultural processes forms a complex, indivisible network that cannot be reduced to a mere collection of isolated components. The synergistic co-evolution of human cultures, neurological brain structures, and the phenomenon of consciousness constitutes a dynamic, relational network that resists reduction to separate elements. This evolutionary narrative encompasses millions of years and documents not only the basic survival activities of early hominids but also the progressive emergence of complex social structures and cultural practices. Innovations, social learning, and teaching—enhanced by selective learning preferences such as conformity and prestige bias—are of great significance in differentiating cultural heritage from genetic evolution. They facilitate the biocultural coevolution of our species (Heyes, Moore, and Tomasello 2023). A more detailed examination of these traits will be provided in the forthcoming discussion on cultural selection.

In the 20th century, it was a widely held view among scientists that humans possessed certain cultural abilities that were not exhibited by other species. Nevertheless, recent evidence increasingly challenges this hypothesis, suggesting that numerous traits previously regarded as exclusively human may in fact represent evolved forms of characteristics observed in other species. This growing body of evidence raises questions about the supposed uniqueness of human characteristics. For example, recent research indicates that orangutans engage in not only basic tool use but also complex behaviors that suggest the existence of cultural traditions within their groups. These findings reinforce the idea that there is a continuity between human and animal behavior, indicating that the distinction between human uniqueness may be more permeable than previously assumed (Whiten et al. 1999; Whiten and van Schaik 2007; Whiten, Horner, and Marshall-Pescini 2003; Horner et al. 2011; Horner et al. 2010). It is well-established in the case of chimpanzees that they possess an extensive cultural repertoire. This encompasses a multitude of behaviors and practices that are acquired and transmitted across generations, indicative of a sophisticated level of social learning and cultural transmission. Such observations challenge the traditional view of culture as

a domain exclusive to humans. Furthermore, these observations reveal striking parallels in the ways diverse species adapt and innovate within their respective environments (Boesch 2003; Boesch, Hohmann, and Marchant 2002; Boesch and Tomasello 1998). Through their observations, field researchers have identified a set of cultural patterns among chimpanzees that encompass approximately 30 different behaviors. These include the practice of "anting," whereby chimpanzees utilize ants as grooming tools, the manifestation of specific greeting gestures that are exclusive to particular groups, and the execution of distinctive practices pertaining to reconciliation (Schnurr 2013, 46). The cultural repertoire of chimpanzees, which encompasses tool production and use, social rituals, and communicative gestures, reveals specific behavioral patterns that are not merely random or solely instinctive. These behaviors are intentionally transmitted and refined within groups, in accordance with the principle of identification with group goals. This process, while not as multi-layered and complex as that observed in Homo sapiens, constitutes a form of "cultural learning" that is significant in our analysis. The evolutionary record makes clear the part played by social interactions and cultural influences in the development of the brain, thereby demonstrating the profound connection between cognitive abilities and the intricate process of enculturation (DeFelipe 2011; Gamble, Gowlett, and Dunbar 2018). The evolution of the human brain and cultural capacities represents the culmination of a complex interplay of dynamic processes that promoted cooperative communication among our ancient ancestors and continues in modern human societies. Cultural and biological evolution have been inextricably linked throughout human history, and this process is exemplified by the significant expansion of the cerebral cortex, particularly over the past two million years. This growth has been integral to enhancing human cognitive abilities and cultural capabilities (Hey 2013). This phenomenon, particularly evident during the process of enculturation, is a distinctive feature of the species Homo sapiens in comparison to other primate species. It is noteworthy that the neocortex, the evolutionarily newest region of the cerebrum, underwent such a significant expansion that it had to fold into convolutions in order to fit within the confined space of the human skull (Lehmann and Dunbar 2009). After all, the human neocortex is approximately three times larger than that of the chimpanzee (Aiello and Dunbar 1993). The enlargement of the frontal lobe, and consequently the frontal cortex, is of considerable significance in this context, as it plays a fundamental role in a number of essential cognitive functions, including the processes of decision-making, problem-solving, and social interaction. This evolutionary expansion is directly linked to the escalating complexity of social structures and the demands of navigating and making decisions within increasingly large social groups. The enhanced capabilities of the frontal cortex facilitated more advanced processing of social information, thereby fostering the development of collective intentionality and subsequent social structures. Consequently, these evolutionary changes have

resulted in human infants being born with less developed brains, necessitating a prolonged period of dependency and leading to more extensive social interactions post-birth (Kirmayer et al. 2020, 66). The enlargement of the human cranium that occurs as a result of cerebral expansion introduces a greater degree of complexity to the birthing process. This results in newborns emerging with brains that are not yet fully mature. Consequently, a substantial proportion of neuronal development occurs postnatally, with notable influence from social and cultural factors (Eller 2019, 220). Throughout their growth and maturation, these brains are immersed in a multitude of social and cultural experiences, which exert a profound influence on the socialization process (ibid., 221).

3.3 Dunbar's Number and the Social Brain

The human brain has evolved over the course of six million years of hominid evolution to adapt to the conditions of tribalistic life, in which hominids lived in small, nomadic groups. These groups typically ranged in size from 120 to 150 members, a figure that aligns with the concept of "Dunbar's Number" (Zhou et al. 2005, 440; Antweiler 2016, 259). This concept, named after the anthropologist Robin Dunbar, postulates that there is a cognitive limit to the number of stable social relationships that an individual can maintain. This limit is closely linked to the size of the neocortex (Decety 2020, 219). The extant research supports the idea that the size and complexity of the neocortex, particularly the expanded regions of the cerebral cortex, correlate with the ability to manage and sustain larger social groups. This correlation indicates that as the neocortex developed to accommodate more intricate social interactions, it facilitated the formation of larger, more unified groups (Lehmann and Dunbar 2009; Powell et al. 2012; Ibrahim et al. 2021; Decety 2020). Empirically, these findings are based on the far-reaching and extensive research on the so-called *social brain* (Decety 2020; Chey 2023; Dunbar 2010; Graziano 2015). The "social brain hypothesis" offers substantial insights into the evolution of human cognition and social behavior through the lens of natural selection. This hypothesis notably draws attention to the correlation between the size of the neocortex and the capacity for managing social groups, positing that the complexity of social interactions within hominid groups significantly shapes social dynamics (Youm and Kim 2023, 217). The term "social group capacity" is used to denote the maximum number of individuals with whom one can maintain stable social relationships, contingent upon the cognitive capacity to process and sustain these social interactions. This capacity is intrinsically linked to human tendencies toward social engagement, cooperation, and altruism, which are seen as products of bio-cultural co-evolution. This interplay suggests that while our cognitive abilities provide the underlying framework for forming and maintaining social bonds, the complexity and dynamics of these

relationships reciprocally influence the development of our brain structures and social capabilities. Therefore, although our social tendencies are innate, they evolve dynamically as a function of, and in interaction with, the sociality of our environment. This evolution reflects an ongoing process of adaptation and development of our social skills in response to changing social structures and group sizes. It demonstrates a complex interdependence between brain evolution and social environmental factors. Dunbar's number represents the theoretical limit to the number of individuals with whom one can maintain stable social relationships. In other words, it is the number of people a person can interact with regularly. Although there is a possibility that these cognitive capacities could expand through evolutionary development, the specific conditions and timeframes necessary for such expansion remain uncertain and are a subject for further scientific exploration. Innate social tendencies are of great consequence, as they act as benchmarks for evaluating the behavior of others and are fundamental to social cohesion. These tendencies provide the foundation for the mechanisms of social decision-making and prosocial behavior, which are particularly evident in navigating various cultural contexts. It is evident that there is a constraint on the number of interactions that an individual can effectively maintain. It is, for example, virtually impossible to engage in regular and in-depth communication with every member of a large group. This limitation is not merely a matter of time or effort; it is also a cognitive constraint related to the processing capacities of the human brain (Daems 2021, 66). Despite the global connectivity enabled by modern technology, limitations such as time, technology, and language constrain our ability to interact effectively across broad networks. It is of the utmost importance to consider not only the breadth of interactions, but also their depth and longevity. The necessity of not every encounter leaving a long-lasting impression is an unavoidable consequence. The human brain's capacity for processing and storing information establishes inherent limitations on the number of social contacts that can be effectively maintained (ibid.). Furthermore, attempting to interact with every person we encounter gives rise to practical questions regarding the significance and productivity of these interactions. The exchange of information that the brain is required to process and store represents a central aspect of social interactions. Therefore, the cognitive capacity to process and store information imposes a fundamental restriction on the number of viable social connections that can be sustained. Insights from disciplines such as anthropology and psychology demonstrate how our cognitive abilities influence the structure of our social worlds (ibid.). The constraints of human social capacity play an instrumental role in the formation and sustenance of cohesive and efficacious communities, wherein mutual comprehension and effective communication prevail. An examination of the concept of the social brain reveals a profound connection between the physiological development of the brain and the evolution of social and cultural structures. The capacity to cooperate, engage in symbolic thinking, and cultivate complex social relationships has

been refined through the evolution of the human species, as evidenced by the ability to live in small groups over extended periods. These capabilities constituted the foundation for the advent of intricate societies and cultures that have exerted a profound influence on human existence over millennia.

Over the course of anthropogenesis, which spans approximately 6 million years, social groups have generally remained below Dunbar's upper limit. During this extensive period, the development of symbolic thinking, empathy, and complex social interactions occurred in conjunction with cultural achievements such as tool use and ritual practices. The existence of Homo sapiens, dated to around 300,000 years ago, underwent profound changes over the past 12,000 years, representing approximately 4 percent of its entire timeline. These changes were precipitated by the advent of agricultural societies. The aforementioned changes marked a transition to larger social structures that exceeded the typical group size of 150 individuals, thereby stimulating complex developments in the realms of politics and social organization. Consequently, within the entire spectrum of 6 million years of hominid evolution, this transformative era of the last 12,000 years represents a mere 0.2 percent of the total time span. Furthermore, the advent of language and the cooperative upbringing of children have emerged as fundamental traits that have undergone co-evolutionary processes at the biological and cultural levels, laying the groundwork for the emergence of today's complex societies. The human brain, particularly the neocortex, which is responsible for higher cognitive functions such as language, planning, and social cognition, has recently been subjected to unprecedented challenges during its developmental phases. A significant correlation has been identified between increased neuronal density and empathic ability, which is coupled with marked improvements in the regulation of emotional states, motivation, and "homeostatic needs" (Damasio 2011, 300). This link is also of consequence to the present analysis of human differentiation. In particular, the relationship between human social behavior, which originated in tribal communities, and the necessity to establish hierarchies, as well as the dynamics of power and dominance, is elucidated. These evolutionary stages are closely associated with the mechanisms of social reinforcement for conformity and punishment for nonconformity (Declerck and Boone 2016, 119). These mechanisms are supported by corresponding neurochemical processes that play a significant role in the reinforcement or discouragement of specific social behaviors (ibid., 73). The neurochemical processes at play not only encourage adherence to social norms but also deter deviations, thereby stabilizing social hierarchies and maintaining order within groups. These dynamics, which are fundamental to an understanding of the biological basis of social behavior, will be further explored in Chapter 5.

The autogenic property of the brain, its capacity for self-organization and self-regulation, is a pivotal element in discourses on the social brain, particularly with regard to the evolution of social cognition, empathy, and action skills (Dux 2017, 45).

This capacity of the brain enables it to respond to social challenges through neuronal plasticity and adaptive learning processes. The capacity of the brain does not simply respond to external social stimuli; rather, it also generates and continuously adapts internal models of social interactions. This dynamic ability enhances our comprehension of social dynamics and facilitates the development of empathy and the capacity for theory of mind, which is the ability to understand and empathize with the thoughts and feelings of others. The autogenic nature of the brain lends support to the hypothesis that the evolution of the human brain is intimately linked with the need to function effectively in socially complex environments. It identifies the vital role of internal processes and mechanisms that underpin and shape the social behavior and cognitive skills essential for group living. These insights into the social brain are relevant to subsequent discussions in the book about human hierarchical and dominance behavior and the tendency to justify existing social systems, providing a foundational framework for understanding the complexities of social interactions and structures.

3.4 Cultural Selection and Biocultural Coevolution

The concept of cultural selection (Sperber 1996) elucidates the manner in which specific cultural forms of expression, symbols, and beliefs are favored and transmitted within social groups. This process is largely governed by the collective mentality of the group's members, facilitating the transmission and diffusion of ideas and practices that enhance group cohesion and effective adaptation to social and environmental challenges (Singh 2022, 267). The selective pressures exerted by environmental factors, social dynamics, resource availability, and other external challenges promote the emergence of adaptive behaviors. Research indicates that increasing social complexity in growing hominid communities created evolutionary pressures that spurred the development and refinement of cognitive abilities to conform to and manipulate social norms (Heyes, Moore, and Tomasello 2023). Cultural selection has been a pivotal factor in human evolution, establishing the foundations for sophisticated social interactions and the formation of resilient, unified communities. The interplay between biological and cultural dimensions, particularly in the context of learning agency during individual development, provides compelling evidence for the profound interconnectivity between culture and biology. The concept of competence to act, which is significantly shaped by cultural processes, reflects an individual's ability to effectively engage with their environment through the use of cooperative communication practices. This capacity for skill acquisition is not merely a feature of human adaptability; it is also evidence of the role of cultural evolution in shaping human development. Over millennia, the invention of increasingly sophisticated tools—such as the spear-thrower, which revolutionized hunt-

ing and food procurement, and the wheel, which transformed transportation and mobility—has led to significant adaptations in the human way of life. These examples demonstrate the manner in which cultural advancements have consistently reshaped human societies and their environments, thereby illustrating the profound impact of cultural selection on the evolution of human capabilities and social structures (Caldwell 2024, 2; Henrich 2016, 26).

Similarly, advances in food preparation, such as cooking, have played a significant role in both cultural and biological evolution. The practice of cooking has not only enhanced the quality of food by rendering it more digestible and increasing its nutritional value; it has also facilitated social interactions surrounding the preparation and consumption of meals. These communal activities surrounding food intake facilitated social bonding and cooperation, which are essential elements of cultural evolution. The act of gathering around a communal fire or cooking space bolstered social bonds and cultivated a sense of community and belonging, which were essential elements of cultural evolution. These gatherings provided a forum for the exchange of knowledge, narratives, and cultural values, thereby facilitating the social learning processes that are essential for cultural transmission. Moreover, the advent of cooking and the emergence of mealtime traditions played a decisive role in the formation of social norms and roles, influencing social hierarchy and cooperation. The division of labor in food preparation and gathering, which often occurs along gender lines, has implications for understanding the social organization and gender roles in ancient communities (Tennie 2024). Languages with expanded vocabularies constitute a critical factor in human development, enabling more precise communication and facilitating the improved exchange of ideas.

This enhanced linguistic capability permitted the articulation of more complex concepts and abstract thinking, which are essential for advanced problem-solving and planning. As language evolved, it became a foundational element in the development of complex social structures and forms of organization. The capacity to communicate effectively and disseminate knowledge efficiently within a group played a pivotal role in the formation of larger, more organized social units, such as clans (Eller 2019, 237). The co-evolutionary development of tools, the use of fire, family-like social structures, cultural traits, languages, and rituals occurred through an interactive feedback process, whereby each innovation influenced and interacted with the others. Cultural achievements not only impacted the immediate human environment but also shaped the selection pressures exerted on human genes. This resulted in a process of biocultural coevolution, whereby biological adaptations and cultural innovations were subject to a dynamic interaction, influencing one another in a continuous cycle. The evolution of the human brain, particularly the neocortex, provided the cognitive capacity for these cultural advances, which in turn were enhanced by them. This reciprocal relationship represents a pivotal topic of debate within the context of the social brain. The argument is made that cognitive enhancements have

contributed to the capacity for more complex cultural expressions, while conversely, these cultural expressions have driven neurological development. Notable examples of such cultural innovations include the advent of written language, which transformed the manner in which knowledge was documented, conserved, and conveyed across generations. This allowed for the continuity and accumulation of knowledge that would not have been possible with oral traditions alone. Moreover, the evolution of mathematical systems enabled more sophisticated planning and computations, which in turn facilitated the management of resources, the construction of projects, and the administration of increasingly complex societies. These cultural innovations did not occur in isolation but were part of a larger matrix of developments that included social structures and technological advancements, with each influencing and being influenced by the other (Henrich and Muthukrishna 2021, 20). The capacity to utilize tools, develop language, establish intricate social structures, and disseminate cultural knowledge across generations exemplifies the profound interconnection between our biological constitution and our cultural milieu (Shea 2023, 55). From the outset, the evolution of culture has been shaped by our evolutionary heritage, particularly our capacity for social interaction and emotional connection. These fundamental human traits established the foundation for the aforementioned innovations, which have been, and continue to be, critical factors in the success of Homo sapiens. Our innate capacity to form intricate social connections and to experience and comprehend a spectrum of emotions has not only propelled the evolution of communal and cooperative behaviors but has also facilitated the emergence of increasingly sophisticated tools, social structures, and cultural norms. These developments have enabled humans to adapt to a wide variety of environmental challenges and to occupy a range of ecological niches. The capacity for emotional connection, in particular, has facilitated the development of more profound forms of communication and collaboration, which are essential for the maintenance and evolution of social groups. Cultural selection mechanisms play a crucial role in the formation, maintenance, and legitimization of social systems. This insight is fundamental to the deeper analysis within our theoretical framework, which seeks to provide a nuanced understanding of human differentiation. Our framework is based on systems theory and augmented by the theory of system justification, thereby enabling a comprehensive examination of the impact of cultural forces on social dynamics. The processes of cultural selection facilitate the development and maintenance of specific norms, ideologies, and practices within social groups, thereby reinforcing the legitimacy of established social structures and enhancing coherence within these systems. Throughout the evolution of the human species, these mechanisms have evolved in a manner that fosters mindsets and behaviors that support the status quo, justify existing power relations, and encourage individuals and groups to accept these structures, even when they may be disadvantageous to them. These dynamics are of critical importance for the creation of system coherence, which is

essential for the self-organization and autopoiesis (as discussed in Chapter 2) of social systems. While the specific forms of cultural selection mechanisms may vary across different contexts, they all facilitate effective demarcation from the environment and establish an internal order that is crucial for the survival and development of the social system.

Against this backdrop, the emigration of Homo sapiens from Africa marked a critical turning point that brought about not only geographical expansions but also significant cognitive and social developments. This migration resulted in an unprecedented broadening of the social and ecological niches that Homo sapiens had to navigate and master. In response to the emergence of novel challenges and environments, there was a heightened necessity for socially coordinated and innovative abilities, which in turn facilitated the further evolution of the social brain. This phase of human evolution offers an example of how established cultural selection mechanisms provided a foundation for social innovations and cooperative skills to flourish and adapt to changing living conditions. During this period, a number of innovative skills emerged, including the construction of watercraft, the manufacture of complex throwing weapons, and the creation of symbolic artifacts such as beads and jewelry. These developments reflect the advanced cognitive abilities and collaborative skills that were essential for early humans to adapt to diverse habitats and climatic conditions across the globe. The capacity to innovate and collaborate effectively in these novel and often demanding environments was not only a means of ensuring survival but also a factor enabling the flourishing of Homo sapiens in a range of geographic settings (Shea 2023, 99). The early and rapid onset of glacial conditions around 75,000 years ago, which persisted until about 15,000 years ago, necessitated significant innovation in order to adapt to the new environmental conditions. The harsh conditions resulted in the depopulation of "Neanderthal country," which encompasses Europe and Western Asia, as well as other regions of northern Eurasia. Approximately 50,000 years ago, humans commenced the colonization of the extensive, frigid region known as the mammoth steppe. To survive in this challenging environment, humans developed advanced innovations in thermoregulation, including tailored leather clothing and freestanding architecture. These innovations constituted vital adaptations that enabled humans to sustain body heat and shelter effectively in the extreme cold (Shea 2023, 289). In addition to these practical innovations, humans also developed more complex strategies for managing fire and creating symbolic artifacts compared to Neanderthals and earlier hominins. The enhanced use of fire, not only for warmth and cooking, but also for landscape management and hunting strategies, marked a significant advancement in human ability to manipulate and control their environment. These innovations were not merely responses to environmental pressures; rather, they functioned as catalysts for further development in social organization and cultural complexity. As humans migrated eastward along the mammoth steppe, they encountered the peak

cold conditions of the Last Glacial Maximum, which occurred between 18,000 and 22,000 years ago. This severe climatic phase significantly impeded and eventually brought their spread to a standstill. The Last Glacial Maximum, which occurred between 18,000 and 22,000 years ago, imposed formidable barriers to human movement and settlement due to the intense cold, vast ice sheets, and challenging living conditions. During this period, the mammoth steppe, a vast and harsh tundra-like environment that spanned from Western Europe across northern Asia to North America, offered limited resources and demanded high levels of adaptability and resilience from human populations. The extreme cold had a significant impact on the availability of flora and fauna, which were critical for sustenance and survival. This, in turn, influenced migration patterns and settlement strategies. In order to survive, human groups had to develop sophisticated survival skills, including specialized hunting techniques and clothing, advanced shelter construction, and efficient use of available resources. These adaptations were of primary necessity for the maintenance of their populations and the preparation for eventual expansions once climatic conditions became more favorable (Pinhasi 2013). The transition from nomadic hunter-gatherer communities to settled agricultural societies, which occurred between 6,000 and 10,000 years ago during the Neolithic Revolution, constituted a fundamental alteration in the dynamics of population movement and human settlement (Bellwood and Dizon 2013). In particular, the increases in overall population size and density that were brought about by the advent of agriculture provided the incentive for large-scale migrations. Some of the earliest migrations were directed towards areas that were already being colonized by hunter-gatherers, particularly those situated in proximity to agricultural "hotspots." These regions, which were fertile and rich in resources, became focal points for the expansion of agricultural practices, drawing in populations from less fertile areas (Shea 2023, 291). This shift enabled humans to cultivate crops and domesticate animals, thereby creating the conditions for the production of surplus food. This, in turn, provided the basis for larger populations and the subsequent growth of villages, which eventually developed into cities. This profound change in lifestyle constituted a significant transformation in the way human societies were organized and interacted with their environments. The capacity to produce and store surplus food led to advancements in social, economic, and political structures. The advent of settled agricultural life gave rise to the formation of more intricate societal hierarchies, a surge in trade, and the accumulation of wealth. These developments had a profound impact on the social and political fabric of these nascent communities. The consequences of this transformation were extensive, affecting not only local communities but also the broader patterns of human civilization. This laid the groundwork for further technological and cultural advancements, which in turn led to enhanced stability and the eventual rise of centralized state systems and complex civilizations. A comprehensive analysis of this seminal period in human history will

be presented in Chapter 7, wherein the long-term consequences and developments resulting from these foundational changes will be examined within the context of *macro-social anthropological constants*.

In other instances of major migration, uninhabited islands situated in proximity to continental masses were subsequently colonized. It is worthy of note that the great oceanic and Polynesian voyages, which commenced approximately 5,000 to 6,000 years ago, enabled human populations to reach distant oceanic islands (Shea 2023, 292). These expeditions were not merely examples of remarkable navigation and endurance; they also facilitated the transfer and adaptation of food production techniques to new destinations. As these populations took up residence in the islands, they adapted their agricultural practices to the distinctive climates and soils, frequently developing highly effective systems for managing land and marine resources. The introduction of crops such as taro and breadfruit, along with techniques like fish pond aquaculture, exemplifies the adaptation of agricultural practices by these communities to their new environments. Moreover, the warmer climatic conditions that prevailed during this period provided the impetus for the permanent colonization of the high Arctic. The indigenous peoples developed more sophisticated strategies for exploiting marine resources than their predecessors. These strategies included the seasonal hunting of marine mammals and the gathering of shellfish, which provided a stable food source for communities in the harsh Arctic environment (ibid.).

3.5 Collective Intentionality

The development of collective intentionality, a concept developed by Michael Tomasello, was a crucial factor in the migratory movements and expansion of Homo sapiens. This psychological framework pertains to the capacity of individuals to not only formulate shared goals and intentions but also to act upon them in a coordinated and cooperative manner. This capacity is fundamental to the formation of complex social structures and was crucial for the survival and success of humans in diverse environments. The capacity for collective intentionality enabled early humans to function within larger, more structured groups, where individuals could anticipate and align their actions with the intentions and behaviors of others. This capacity for shared understanding and mutual expectation is the foundation upon which social norms and cooperative strategies are built, which are essential for the management of communal life, the planning of migrations, and the adaptation to new environments (Tomasello 2020, 123).

In his work, renowned evolutionary psychologist Michael Tomasello presents a two-level model that captures the evolutionary transition in social and cognitive abilities that distinguishes humans from other primates. In the initial stage,

Tomasello concentrates on the concept of shared intentionality, which allows individuals to possess shared intentions and goals, thereby facilitating intense cooperation and coordination within small groups (Tomasello 2022, 126). This basic capacity provides the foundation for collaborative activities such as cooperative hunting or resource sharing and establishes the groundwork for mutual understanding and support. Building upon this, Tomasello develops the cognitive framework further to include the concept of collective intentionality. This progression encompasses the ability to recognize, develop, and uphold shared norms and values within larger communities that extend beyond individual interactions. This advanced level of intentionality enables individuals to comprehend and adhere to social rules and norms that are essential for coexistence within broader social structures (ibid.). The capacity for collective intentionality, which is characterized by an intricate interplay of cognition and emotion, has facilitated the development of complex organizational structures that surpass earlier forms of social organization. This adaptation of thoughts, feelings, and actions to the social norms of one's group has established a fundamental paradigm in human cultural evolution: identification with one's group. This identification proves to be a key factor in the long-term success of humans, allowing for the optimal utilization of their creative potential within social structures.

Affective resonance, which is facilitated by collective intentionality, is of great consequence in distinguishing humans from other primates and early hominids, particularly in the context of human differentiation. The formation of shared goals and intentions led to the emergence of a profound sense of belonging, which transformed human groups from loosely cooperative aggregates into tightly-knit communities with distinctive narratives and cultures (Tomasello 2020, 128). This deep-seated emotional and cognitive interplay within self-identifying groups has been a crucial factor in the formation and sustenance of highly efficient social structures. The shared emotional states and beliefs within a group, particularly concerning social norms and values, became a catalyst for enhancing human organizational and coordination capacities. This cooperative communication dynamic not only reinforced internal cohesion among growing communities but also provided the foundation for innovation and knowledge sharing. The collective focus on achieving shared goals, such as ensuring food security and protection, drove the evolution of certain emotional traits and social behaviors. The selection mechanisms favored those emotions and beliefs that supported adaptive strategies, such as empathy and the pursuit of social harmony. These traits have enabled human societies to effectively navigate challenges and seize opportunities, facilitating not just survival but also the flourishing of communities. The phenomenon of collective intentionality exerts its influence at two fundamental levels: On the one hand, it reinforces the internal cohesion and coherence of the group; on the other hand, it enables differentiation from external groups (Bennett and Sani 2008). When

collective sentiment is deeply entrenched within social groups, it cultivates a robust sense of belonging and identity. This sense of identity is frequently manifested through ritual actions, shared beliefs, and uniform behaviors, which help anchor members' emotional and cultural bonds, enhance internal coherence, and shield the group from external influences. As population density increases and competition intensifies, the ability to adapt to and comply with social norms becomes a crucial factor in maintaining group cohesion. Consequently, conformity emerges as a vital component of group dynamics. Cultural practices that are characterized by a pronounced group consciousness not only signal conformity but also establish internal cohesion. Such practices include rituals, ceremonies, and shared cultural narratives that help enhance group solidarity and draw a clear distinction from other groups. The human need for security and belonging naturally fosters social cohesion and mitigates cognitive dissonance. This drive enables the formation of cultural systems in which norms and values are not only shared among group members but are also actively shaped and lived out. Such environments facilitate the development of complex social and cultural structures, which in turn support the evolution of sophisticated societies (Heyes, Moore, and Tomasello 2023).

The following sections of this book will undertake a recurrent examination of the dual aspects of collective intentionality, namely internal cohesion and differentiation from outsiders. A significant aspect of human differentiation is the formation of norms within the context of collective intentionality. This process occurred concurrently with the emergence of objective thinking and group orientation. This evolution in thought extends beyond the mere generalization of individual perspectives or the aggregation of numerous individual viewpoints. Rather, it entails the capacity for abstract thought, the ability to generalize, and the formation of objective perspectives. These cognitive advancements are of critical importance as they provide the foundation for long-term normative views within societies. In this context, objective thinking is defined as the capacity to form ideas and judgments that are perceived as not merely subjective to any one individual but as holding universally within the group.

Gossip, understood as a mechanism for the maintenance and enforcement of social norms within the context of collective intentionality, constitutes a crucial element of social dynamics within human groups (Wiessner 2014). Gossip is not merely a conduit for the dissemination of information; it is also a crucial instrument for the consolidation and reinforcement of shared values and standards of behavior. It often focuses on transgressions of norms and the behavior of individuals, particularly those in prominent positions, thereby functioning as a covertly potent instrument of social regulation (Wiessner 2005). In the context of collective intentionality, the role of gossip in shaping group norms is of pivotal importance. This is achieved by identifying and marking behaviors as either acceptable or unacceptable. This dynamic function is of critical importance for the formation of a shared understanding of

norms and values, which lays the foundation for collective action. Gossip can result in sanctions such as collective criticism, exposure, ridicule, and even social exclusion. This makes gossip an effective modulator of social behavior that significantly contributes to group coherence and unity (Wiessner 2020). The substantial influence of gossip in maintaining social norms and influencing collective intentionality illustrates the intricate nature of social processes that consolidate social orders and group identities. This understanding prompts a reflection on the functions of gossip, which reveals that the development of objective thinking is an evolutionary response to the need to transcend the immediate, often emotionally charged, and subjectively shaped interactions within a group (ibid.). By facilitating a broader, more detached perspective, objective thinking allows individuals and groups to evaluate and respond to information in a manner that supports long-term group stability and adaptability. This evolution of thought processes represents a sophisticated adaptation to the complex social environments humans navigate, enabling more nuanced and effective social coordination and cooperation.

The capacity for *objective thinking* enables the critical analysis and evaluation of information that extends beyond immediate social dynamics. This, in turn, facilitates the formation of concepts and theories that aspire to intersubjective validity. This illustrates the necessity of transcending individual subjectivity in order to gain a perspective that encompasses the intricate interplay of social interactions and collective norms, which is crucial for progressive knowledge and understanding of the environment. The capacity for objective thinking is characterized by the ability to perceive phenomena in the world, particularly in contexts such as hunting and other cooperative endeavors, in a neutral manner, largely devoid of personal biases. This mode of thinking broadens the cognitive basis of early humans, facilitating a group-oriented comprehension that transcends individual perspectives. It establishes a meta-framework for interpreting intentions and emotions, thereby enhancing the ability of group members to coordinate their actions and goals effectively (Tomasello 2020, 141). This capacity for objective thinking enabled humans to move beyond subjective experiences and develop shared strategies and techniques that were instrumental in the success of hunting endeavors. It is noteworthy that this ability was not exclusive to male hunters; it enabled female hunters to collect, analyze, and disseminate information about animal behaviors and environmental conditions, which was instrumental in coordinating and planning hunting expeditions effectively. The capacity for objective thinking, characterized by an actor-neutral perspective, proved instrumental in the resolution of coordination problems that frequently arose when interacting with unfamiliar individuals who did not share a common background. This was of particular significance in hunter-gatherer societies, where interactions with individuals from outside the group or those with whom there was less familiarity could occur during migration or at communal gatherings. The evolution of objective thinking and its concomitant empathy was pivotal for effective communi-

cation and collaboration across a broader spectrum of group members. These cognitive abilities enabled individuals to engage in more sophisticated social interactions, which were vital for maintaining social cohesion and ensuring a shared understanding of social norms. The theory of collective intentionality significantly extends the concept of "Dunbar's number," which focuses on cognitive limitations and the maximum number of stable relationships one can maintain. This theory examines how humans develop the capacity to cooperate effectively in much larger groups through the establishment of shared intentions and goals. Cultural and symbolic aspects of human society, including language, traditions, and norms, facilitate the transcendence of social limitations imposed by Dunbar's number, despite the persistence of cognitive limitations at the individual level. Collective intentionality plays a pivotal role in the formation of intricate social structures that extend far beyond the confines of intimate, personal relationships. It functions as the bedrock upon which the growth and sustenance of expansive, structured societies are built. This collective cognitive framework permits the establishment of shared goals and the coordination of group efforts on a scale that individual cognitive capacities are unable to manage independently. It incorporates cultural elements that provide a common ground for understanding and action, such as myths, laws, and rituals, which help bind larger communities together and enable them to function as cohesive units despite the absence of personal ties between all members.

Reflective thinking represents a further pivotal aspect of early human cognition and social interaction. Rather than evolving directly from objective thinking, it emerged as a complementary cognitive ability during hominid evolution. This form of thinking enables individuals to engage in introspection regarding their own mental states and those of others, as well as to adopt a variety of perspectives. An enhanced cognitive capacity facilitates the interpretation and anticipation of behaviors and expectations within a social environment. The capacity for reflective thinking is a vital component in the formation and maintenance of social norms. It enables individuals to comprehend and internalize the unwritten rules and standards of their communities, thereby aligning their behaviors with communal expectations. This capacity has played a significant role in human cultural development and the evolutionary trajectory of social systems. Furthermore, reflective thinking facilitates collective discussion about norms, enabling groups to reach a consensus that forms the foundation for new behavioral standards. This dynamic and flexible adaptation to evolving norms allows social groups to respond effectively to environmental changes and shifts within the community. The iterative process of reflection and adaptation underpins the resilience and continuity of cultural and social structures, promoting cohesion and stability in human societies.

Another noteworthy attribute of the bio-cultural and cognitively, affectively, and socially synchronously evolved human capacity is the concept of *dual system models* (Kahneman 2013; Kannengiesser and Gero 2019; Faghihi et al. 2015; De Houwer 2019;

Alter et al. 2013). These models, which are closely related to the development of Homo sapiens and collective intentionality, posit the existence of two distinct systems of cognition, each characterized by a set of contrasting properties. Such characteristics include, for instance, speed, slowness, intentionality, unintentionality, consciousness, and unconsciousness, in addition to associativity and propositionality. In the literature, these are frequently designated as systems 1 and 2, respectively. The two thinking systems represent disparate modes of information processing and decision-making. System 1 represents a rapid, intuitive mode of cognition that occurs unconsciously and automatically. The system responds to immediate social stimuli and employs heuristics, or mental shortcuts developed through evolution, to facilitate rapid decision-making (Kahneman 2013, 24). This is particularly advantageous in situations where prompt judgments are necessary, such as in identifying willingness to cooperate or in evaluating group dynamics. In the context of collective intentionality, System 1 plays a significant role, as it allows individuals to react rapidly and efficiently to social stimuli. These intuitive processes are deeply rooted in evolutionary history and form the basis for spontaneous, instinctive cooperative actions. System 1 plays a pivotal role in fostering trust, initiating cooperation, and identifying cues indicative of a unified front among group members. System 1 behavior is often associated with a sense of ease because it is automatic and effortless. It is based on experiences and intuitive reactions that require little conscious effort and thus consume less cognitive energy (Kahneman 2013, 66). In contrast, System 2 represents a slower, more deliberate, and analytical mode of thinking, which is employed when more complex and long-term decisions must be made. System 2 is responsible for the cognitive processing of norms and rules, as well as for the reflective and rational assessment of social situations. This mode of thinking is of importance with relation to the establishment of social norms, shared objectives, and strategic collaboration that extends beyond immediate action. In Tomasello's theory of collective intentionality, the capacity to reflect on one's own actions and align them with the goals and expectations of the group is manifested in System 2. This enables humans to act both instinctively and in a manner that aligns with the long-term well-being of the group and the complex social systems made possible by collective intentionality. The two systems interact dynamically, thereby enabling the complex social cognition described by Tomasello as a prerequisite for collective intentionality. System 1 is an indispensable prerequisite for efficient social interaction, providing the foundation for the establishment of trust and for prompt cooperative decision-making. In contrast, System 2 ensures the sustainable reflection and strategy development within the group and consumes more cognitive resources. Consequently, this results in the capacity to engage in cooperative short-term actions while pursuing long-term, collective objectives. This development had a seminal impact on the advent of culture, institutions, and social norms. The insight of the dual system models is significant in this context, but it should not be regarded as absolute. It is

important to note that these models should not be regarded as strictly dualistic, as they could imply a degree of determinism that does not accurately reflect the complex and dynamic processes involved in human cognition and sociality. Rather than assuming a fixed dichotomy between intuitive and rational thought processes, it is more precise to assert that these systems are in a constant state of change and interact adaptively in diverse social and cognitive settings. In light of the book's emphasis on the interconnectivity of diverse systems, including physical, social, mental, cultural, and geopolitical, the dual system models offer valuable insights. However, they represent only a portion of a more comprehensive picture. The objective is not to impose inflexible categories on human cognition; rather, it is to comprehend how these systems operate as overlapping, complementary, and frequently concurrent mechanisms. Consequently, apparent contradictions, such as those between intuitive and conscious processes, can be understood as part of a complex, adaptive structure. This has enabled the development of highly flexible and collective social structures. The objective of this chapter is to comprehend the interactions and transitions between the various systems of thought not as mutually exclusive entities, but rather as dynamic processes that collectively facilitate and reinforce the collective intentionality of the human being. The relationally acting systems interact with each other, with schemata serving as a pivot point. In the schemata of differentiation, System 2 breaks through the automated, unconscious processes of System 1 through conscious reflection anchored in the cerebrum. This reflection is controlled by an instance called the "self," which is empirically difficult to grasp. The transcendence of System 1 by System 2 comes at the cost of abandoning the pleasurable feelings associated with the rapid, unconscious differentiation processes of System 1 in favor of deeper, more reflective choices. Conscious reflection, which requires more cognitive resources, is thus literally responsible for the loss of the pleasurable feelings associated with automated processes. This will be discussed in more detail in the context of the binary coding of affects within the framework of schemas of differentiation (see Section 6.4). Nevertheless, it would be an error to draw any linear conclusions up to this point in order to avoid oversimplification of the complex processes of human cognition. The objective of this approach is to eschew oversimplification of the intricate processes of human cognition. In contrast, it illustrates the integrative relationship between social, cultural, and cognitive systems. Consequently, *the rapid and almost automatic processing and analysis of information* has constituted a critical element for the survival advantage that humans have enjoyed over the course of evolutionary history. The close *integration of affective, cognitive, and physical structures* has facilitated this process, which has been internalized and now occurs with minimal conscious effort. This integration resulted from the co-evolution of the various cognitive and social abilities previously discussed in this chapter. The convergence of emotions, thoughts, and physiological responses, which is discussed in greater detail later in this book under the concept of schemata (see Chapter 6), plays a central

role in the processes of meaning attribution and the formation of group identities. The concept of schemata elucidates the symbiotic relationship between emotions, cognitive processes, and physiological reactions, which imbue perceptions and interactions with meaning and direction. This dynamic interplay is not only crucial for individual psychological functioning but also has profound social and cultural implications. This has implications for how we perceive social groups, respond to complex social scenarios, and demonstrate cultural norms and values in our everyday decision-making. These integrated processes enable individuals to respond rapidly and adaptively to their environments, thereby enhancing their capacity to navigate social complexities and maintain cohesion within their groups. By streamlining the processing of social cues and automating certain responses, schemata facilitate human functioning within increasingly expansive and intricate social structures.

The advent of modern humans gave rise to a novel form of life organization, one that is distinguished by a symbolic-medial existence enabled by the faculties of thought and language. This form of organization is based on the fundamental biological structures of human existence but is constituted at a distinct level: the sphere of thought, which undergoes its formative process through language. The evolution of conceptual frameworks at this abstract level has conferred a substantial advantage on modern humans in comparison to other hominids. From the perspective of biocultural coevolution, it becomes evident that human social learning and cooperative behavior are shaped by a complex interplay between genetic predispositions and cultural transmission mechanisms, including group-based identification and dynamics. This perspective provides insights into the ways in which human societies adapt to their environments and the role of cultural innovations in overcoming challenges. This illustrates the crucial function of culture in human evolution and as a means of ensuring group survival. The concept of selection is frequently misunderstood and misrepresented. A prevalent misconception is the reductionist notion of "survival of the fittest," as postulated by Herbert Spencer. This concept is misleading when applied to the social organization of humans. Spencer's model posits a perpetual conflict over genetic survival. However, a more accurate characterization of human evolution is that it is a process of *successful cooperation*. The various modes of communication that facilitate this cooperation are of critical importance, with the evolution of emotions playing a pivotal role within the framework of bioculturally evolved behaviors. The expression of emotion serves two key functions: firstly, it reinforces group cohesion, and secondly, it facilitates effective communication. They facilitate the formation and maintenance of cultural practices and social structures based on collective intentionality, which are indispensable for the flourishing of social systems. This sophisticated comprehension of human evolution signifies a transition from a perception of competition as the principal determinant of survival to an acknowledgment of the preeminent significance of collaboration and cultural adaptation. Cultural practices and social structures are of great consequence

in the consolidation of power and authority. This is accomplished through the consolidation of leadership structures, the establishment of symbols, rituals, and traditions, and the integration of social hierarchies into the collective consciousness. Social norms and legal systems, which are products of cultural constructions, regulate behavior, control access to resources, and establish mechanisms for conflict resolution. Such structures facilitate the establishment of orderly power relations and efficient coordination within communities. As manifestations of social structures, these elements are the outcomes of a prolonged process of cultural evolution, which has yielded efficacious strategies for the maintenance of power and the safeguarding of the community. This evolutionary process has not only facilitated the stability of social groups but has also enabled them to adapt to new challenges and environments by institutionalizing effective strategies for managing power dynamics and resource distribution.