# Scaffolded Identity: Selfhood and Symbolism in the Archaeological Record

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Abstract
This paper revisits the Identity Model (Cole 2019 and references therein) and offers a revised account aligned with recent research on identity and social cognition. The original model linked first- to sixth-order intentionality to possible archaeological signatures, treating symbolic artefacts as traces of self-expression and social identity. We refine this framework by drawing on work that understands identity as emerging from embodied, pre-reflective experience and intersubjective participation. Current evidence indicates a key threshold around third-order intentionality—supporting shared attention, reference, and cooperation—beyond which greater complexity is driven less by deeper recursive mindreading than by cultural mediation, norms, and collective practices. We therefore reconceive identity expression as expanding through culturally and materially scaffolded shared worlds, rather than through hierarchical cognitive leaps. The revised model remains archaeologically tractable, yielding expectations about standardisation, contextual clustering, and durable body-work (e.g., pigments, beads, and mortuary treatment), while cautioning against reading symbolic artefacts as straightforward proxies for language.

## 1. Introduction

Questions about symbolism in prehistory continue to sit at the crossroads of archaeology, cognitive science, and philosophy: when and how did hominins begin to inhabit worlds saturated with shared meanings, and what kinds of material traces do such worlds leave behind? In cognitive archaeology, debates have long sought to connect specific forms of artefact production, display, and bodily practice to linguistic and symbolic capacities. Our contribution approaches the symbolism question by focusing on the conceptual bridge between material expression and self/other understanding. We ask how archaeological signatures of display and communication can be read in relation to changing forms of identity and sociality, and we do so by revisiting and refining a model that previously articulated that bridge.

From an archaeological perspective, discourse on prehistoric symbolism has typically been coupled to assessments of cognitive, linguistic, and semiotic capacities and the feasibility of inferring such capacity from material culture (e.g., Mithen 1996; Carruthers and Chamberlain 2000; Lewis-Williams 2002; Dunbar 2004; Gamble 2007). Earlier work in this domain distinguished speech from language, and human symbolic communication from iconic and indexical animal communication (Deacon 1997; Dunbar 2004; Origgi and Sperber 2000; Barbieri 2010; Pinker 2010; Kull 2009). Classic examples, from predator-specific alarm calls in macaques to the recognition and

reproduction of culturally patterned tool forms, helped sharpen the contrasts between animal semiosis and the socially agreed representational conventions characteristic of language (Whiten 1993; Coss et al. 2007; Kull 2009; Barbieri 2010). If one accepts that language, as a symbol system, marks a specifically human mode of communication, then the archaeological record of symbolism invites interpretation as a window into the gradual materialisation of those symbolic capacities, even when the strength and direction of this inference remain contested.

In its original formulation, the *Identity Model* was loosely tied to such debates on the emergence of language and cognition. The model aimed to assess hominin cognitive potential via concepts of identity as expressed through the body, visual display, and material culture, without making categorical claims about specific hominin species (Cole 2011; 2012; 2014a; 2014b; 2016; 2019). By drawing on the *Social Brain Hypothesis* (Dunbar 1996; 1998a; 1998b; 2003; 2004; Gamble et al. 2014), it linked various orders of intentionality—that is, levels of recursive social understanding—to archaeological signatures. It thus served as a proxy framework: as a way to organise observations about display, ornamentation, standardisation, and bodily marking into a narrative about the development of identity.

The present contribution revisits the Identity Model and modifies it in three important ways. First, recent work in cognitive archaeology and archaeological theory has become increasingly attentive to the limits of treating symbolic artefacts primarily as expressions of language-like referential capacities. Material symbolism need not be understood only as the externalisation of symbolic thought or communication; artefacts may also operate within socially and materially organised practices, where their force lies in how they orient attention, mediate interaction, and become recognisable within shared forms of life (Overmann, this volume; van Mazijk, this volume). This makes the use of symbolic artefacts as straightforward proxies for linguistic capacity more problematic. Consequently, we do not treat identity expression as evidence for language or cognition in general, but as a more specific dimension of symbolic behaviour: the material articulation of self- and group-formation within social life.

Second, recent work in social cognition—particularly that associated with Theory of Mind and shared intentionality—has refined our understanding of what kinds of behaviours are supported by different forms of intentionality (e.g., Tomasello 2010; 2021; O'Madagain and Tomasello 2022). Rather than construing higher social-cognitive achievement primarily as deeper recursive mindreading—that is, as the capacity to track increasingly nested mental states—this work emphasises cooperative triadic interaction and norm-guided participation in shared practices as key thresholds for human-like communication. This suggests that, once hominins managed shared intentionality, the route to richer symbolic life would proceed less by additional layers of recursion, as previous versions of the Identity Model tended to imply, and more by enhanced norm-sensitivity, cultural learning, and material scaffolding.

Third, we revise the model's account of identity itself. Instead of treating identity as a single capacity that increases in parallel with cognitive complexity, we understand it as layered: beginning in embodied self-awareness, developing through being perceived by others, and becoming increasingly reflective, role-based, and institutionally mediated. This yields five identity categories—Embodied Identity, Self-for-Other Identity, Reflective Identity, Role–Norm Identity, and

Narrative–Institutional Identity—which structure the revised model below. This also turns "identity" from a psychological possession or representational self-concept into a world-mediated developmental structure: the self becomes more complex as the world in which it acts, is seen by others, takes on roles, and is materially scaffolded becomes more complex. This allows us to distinguish minimal embodied and self-for-other forms of identity from role-norm and narrative-institutional identity, without assuming that each step requires a new order of recursive intentionality.

The revised model therefore preserves the archaeological ambition of the original Identity Model while changing its conceptual basis. Symbolic artefacts, bodily display, pigments, ornaments, mortuary practices, and recurrent visual forms are not treated as direct read-outs of linguistic capacity or increasingly deep mindreading. They are approached instead as material traces of scaffolded identity formation: practices through which selves and groups become socially recognisable, reproducible, and durable within shared worlds. This yields archaeological expectations concerning standardisation, contextual clustering, recurrent body-work, and the stabilisation of visual forms across social and material settings.

We proceed by first clarifying the concepts of self and identity (Section 2), then revising the relation between intentionality and identity formation (Sections 3–4), before setting out the Scaffolded Identity Model and its archaeological implications (Sections 5–6).

**2. Self and identity**

Questions of identity offer one way of approaching the problem of symbolism in prehistory. Symbolic artefacts like ornamentation, bodily markings, and deliberate acts of display do not simply communicate information, but participate in shaping how individuals and groups understand themselves. Considering identity alongside semiotic dimensions thus shifts the question from what symbols represent to how they participate in forming selfhood and social belonging.

In philosophy, identity has long been tied to notions of self and intersubjectivity. While early modern thinkers such as Descartes and Locke typically framed the self in terms of self-reflection (the *ego cogito*) and continuity, early 19th century German Idealists like Fichte and Hegel redefined it as something inherently mediated by others and by culture (Fichte 2000; Hegel 2018). Twentieth-century phenomenology deepened this view: Husserl's analyses revealed self and other as dynamically intertwined (Husserl 1960; 1973a–c; van Mazijk 2025), Heidegger grounded selfhood in being-with others in a shared world (Heidegger 1962), and Merleau-Ponty described the body as the medium through which we inhabit that world (Merleau-Ponty 2012).

Recent phenomenology and cognitive science have refined these ideas through the notion of *pre-reflective self-awareness*: the minimal, embodied sense of self that precedes introspection (Zahavi 2005; 2014; Gallagher 2000; Zlatev 2007). Enactivist and material engagement approaches extend this view, treating identity as enacted in organism–environment coupling and practical activity rather than represented internally (Varela, Thompson and Rosch 1991; Thompson 2007; Malafouris 2013). Identity, in this sense, is a dynamic and situated process enacted with and through things and others (De Jaegher and Di Paolo 2007), one that may, at least in part, leave traces in the material record (see Section 6–7).

Psychological research converges on a compatible relational picture of identity. Studies of self and identity have emphasised that individuals define themselves in particular through relations with others, which can be both personal and collective (Brewer and Gardner 1996; Sedikides and Brewer 2000). The self is thought to operate across three interacting levels: individual, relational, and collective (Markus 1977; Sedikides and Brewer 2000; Cole 2016). These dimensions fluctuate significantly with social context, revealing identity as a highly fluid, relational, and culturally embedded achievement rather than a fixed property of the mind.

**3. Revisiting the Identity Model**

The Identity Model developed by Cole (2011; 2012; 2014a; 2014b; 2016; 2019) proposed that identity formation as mediated through bodily display and material engagement could serve as a proxy for the cognitive potential of extinct hominins. In its initial formulation, it drew inspiration from the *Social Brain Hypothesis* (Aiello and Dunbar 1993; Dunbar 1996; 1998a; 2004) and early applications of Theory of Mind and orders of intentionality (Tomasello and Call 1997; Baron-Cohen 2001). Dunbar's Social Brain Hypothesis proposed a link between primate neocortex size, group size, and the cognitive demands of social life, suggesting that increasing social complexity required higher capacities for recursive mindreading or Theory of Mind: the ability to represent others' mental states and the relations among them.

Although there have been many criticisms of the Social Brain Hypothesis (e.g., Barrett, Henzi and Rendall 2007; de Ruiter, Weston and Lyon 2011), a persistent question has been whether its cognitive predictions can be tested against the archaeological record (Cole 2014a; 2014b). Dunbar (2007) himself was skeptical, arguing that the hypothesis concerns mental processes rather than material traces. Yet research has emphasised that material culture plays an active role in structuring social relations (Barham 2010; Gamble 1999; 2007; Gosden and Marshall 1999; Ingold 2007), and also that early tool use might reflect social learning, coordination, and teaching (Bamforth and Finlay 2008; Stout 2002; van Schaik and Pradhan 2003; van Mazijk 2024).

Within this context, the Identity Model used orders of intentionality as a proxy for the cognitive depth of identity formation, with symbolic artefacts indexing higher-order social understanding. In its earlier formulations, the model assumed a roughly linear relation between increasing orders of intentionality, expanding self–other awareness, and rising cognitive complexity. Thus, the capacity for recursive mindreading was organised into a schema of identity formation, whereby increasingly complex identity awareness is inferred from material signs of bodily display and symbolic behaviour (Fig. 1).

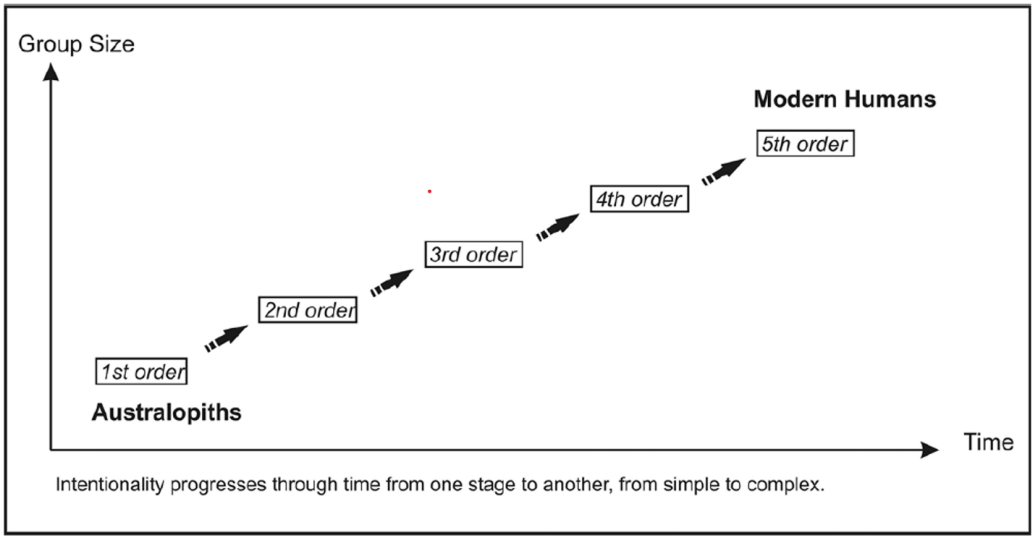


Figure 1. A simplified view of the way the Social Brain Hypothesis lays out the orders of intentionality in a linear fashion through time, as previously used in the Identity Model (from Cole 2014b).

While this mapping was heuristically useful, it relied on a too linear correspondence between levels of intentionality, identity formation, and cognition itself. Subsequently, the model was revised in McNabb and Cole (2015) and further refined in Cole (2019) (Fig. 2).

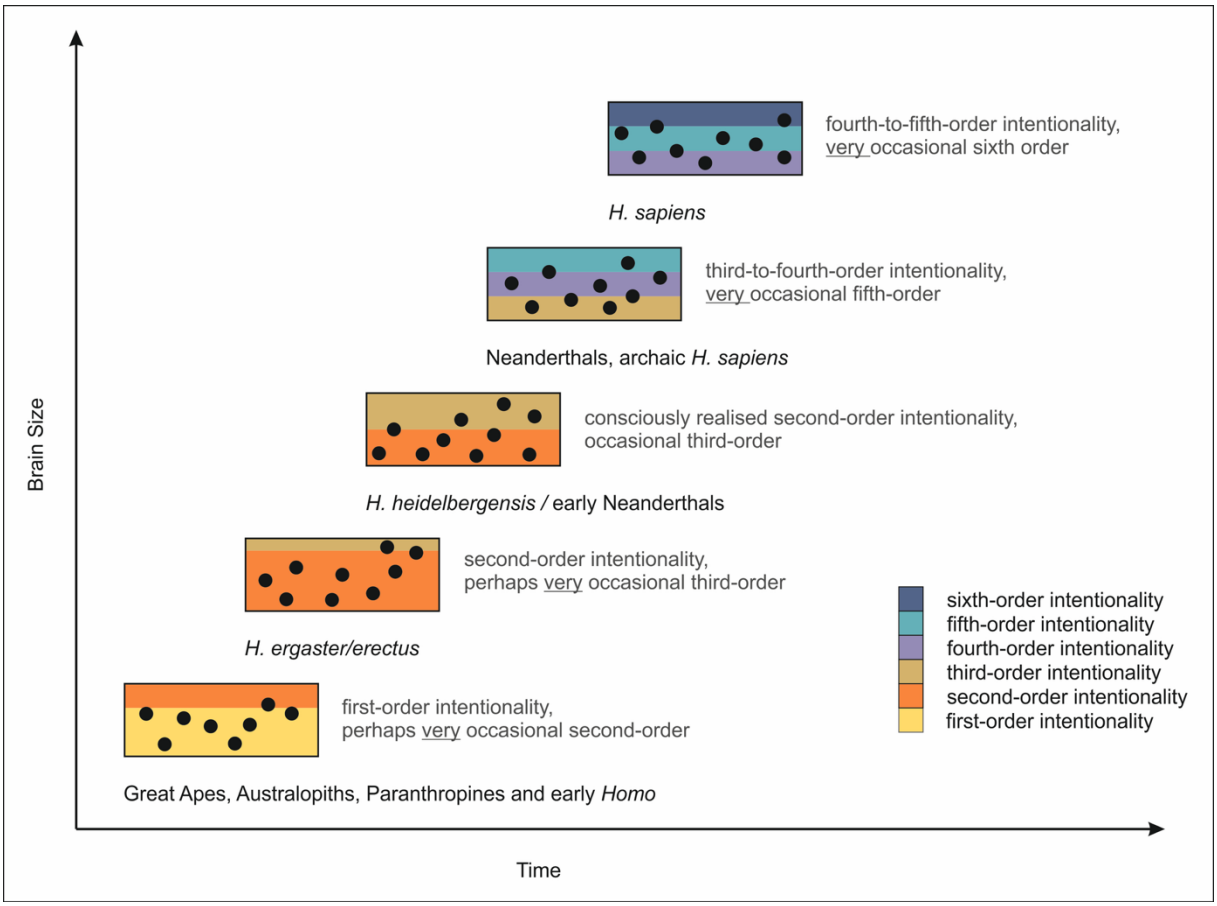


Figure 2. Schematic of the variable-equilibria model. The black dots indicate variability of brain size within species, not only between individuals but also within populations and groups. The species are suggested examples of those that have attained the corresponding orders of intentionality. However, the examples are not limited to those named. Adapted from Figs 5 and 6 (p. 109) in McNabb and Cole (2015) and published in Cole (2019).

As the next section elaborates, recent developments in social cognition research suggest that human-like cooperation may depend less on further recursive mindreading (propagating the 'cognitive ladder' view of hominin cognition) and more on shared intentionality, norm sensitivity, and cultural scaffolding. In addition, more recent work (see below) would now adjust the recognised first / second order intentionality attainment to include Great Apes (and by extension, Australopiths, Paranthropines and early *Homo*) to have at least 2nd order intentionality. A conceptual revision of the model is therefore required.

## 4. Linking orders of intentionality to identity

This section clarifies how orders of intentionality relate to the revised account of identity. We do not assume that selfhood has a single form across all biological or artificial systems. The account developed here is heuristic and phylogenetic in scope: it concerns the emergence and differentiation of self- and identity-related capacities within the primate and hominin lineage, especially where these capacities become socially and materially expressed. We initially distinguish the first three orders of intentionality and their behavioural correlates, then relate these levels to embodied, self-for-other, and reflective identity. Finally, we explain why identity formation beyond this threshold should be understood less as further recursive mindreading than as cultural and material scaffolding.

### 4.1. Orders of intentionality and shared attention

To begin, we define first-order intentionality as non-recursive intentional action or perception directed at the world (note that, in some treatments, this first level is omitted, which shifts all subsequent orders downward). In its simplest form, this is object-directed awareness or action: "I see X," "I want X," or "I intend to do X." It may include responsiveness to other animate beings, for example in perceiving another's movement, expression, or affective state, but it does not yet involve representing another's awareness of an object. In this sense, first-order intentionality can support embodied attunement and affect recognition without amounting to recursive mindreading.

Second-order intentionality introduces the first level of recursion. Here, another individual's intentional state—their directedness toward an object—is embedded within one's own: "I see that you see X". This is a genuine act of mindreading, as it involves grasping what the other is oriented toward in the world. Third-order intentionality adds a further recursive step and typically refers to recognising another's communicative or directive intention toward one's own attention: "I see that you want that I see X". Here, the intentional structure becomes doubly embedded: my awareness includes your intention to affect my intentional state.

The significance of these first three orders of intentionality for primate social behaviour—both human and non-human—is well supported by experimental and observational research. First-order intentionality supports basic object-directed action and perception, and may include embodied responsiveness to others' expressions, such as emotional contagion and mimicry, capacities that are widespread across vertebrate species (Preston and de Waal 2002). Second-order intentionality, involving the tracking of another's perceptual orientation, is most clearly observed in gaze following: an ability documented in numerous animal taxa, although its flexibility and reliability vary across species, with the highest success rates among primates and domesticated species

(Zeiträg et al. 2022). Chimpanzees use gaze following in both competitive and communicative contexts when making pantomimic requests (Tomasello 2010; Tomasello and Call 2019). In humans, it appears in infancy around six months (Tomasello 2021).

Current evidence indicates that third-order intentionality represents a crucial threshold in the evolution of human communication and cognition (Tomasello et al. 2005; Tomasello 2010; 2021; O'Madagain and Tomasello 2022). In terms of orders of intentionality, this requires more than monitoring what another individual perceives: it involves recognising another's intention to direct or share attention. This is what Tomasello and colleagues describe as shared intentionality, namely the capacity to participate with others in activities structured by shared goals, attention, and intentions. Such capacities lay the groundwork for joint action, learning through instruction rather than mere observation, and cumulative cultural transmission.

A key behavioural manifestation of this is pointing: a triadic, referential gesture that aligns attention toward an external object for a shared purpose. Unlike gaze following, spontaneous declarative pointing appears to be distinctively human, although ape pointing in captivity and related communicative gestures complicate any simple dichotomy (Leavens et al. 2005; Pika and Mitani 2006; Badihi et al. 2023). Chimpanzee pantomime is typically dyadic, face-to-face, and demand-driven, whereas human declarative pointing is characteristically triadic and referential: it establishes an object as a shared focus of attention (Tomasello 2010; 2021; Tomasello and Call 2019).

**4.2 From intentionality to embodied, self-for-other, and reflective identity**

Here we may ask what kinds of identity-formations might be required for these first three levels of mindreading. The relationship between orders of intentionality and identity awareness is not yet fully theorised, but we believe a broad connection can be drawn by returning to the earlier distinction between *pre-reflective* and *reflective* self-awareness.

In phenomenology and cognitive science, *pre-reflective self-awareness* refers to the immediate, tacit awareness of oneself as a living, sensing, and acting body (Zahavi 2005; 2014). It is non-observational: one does not have to think about oneself, yet every perception and movement is experienced as one's own. Since Husserl, this has been understood as the *for-me-ness* implicit in experience (Husserl 1973a–c). Husserl further proposed that such embodied, pre-reflective self-experience grounds basic forms of social understanding: because I have direct, non-reflective access to my own bodily feelings and capacities, I can recognise other bodies as animated and experientially "like me" (van Mazijk 2025). This insight has been said to anticipate embodied simulation theory and mirror-neuron research, which similarly suggest that social understanding begins not in reflective inference, but in bodily resonance (Williams 2021).

From this perspective, a very basic form of self-identity must be said to precede both symbolic self-display and intentional social signalling. The mere fact that I can move, act, and explore—the implicit *"I can"*, as Husserl called it—already entails a primitive form of self-awareness. This pre-reflective awareness is sufficient for apprehending others' emotional states, allowing us to "use our bodies as resonance boxes, so to speak, in feeling the emotions of others" (Zlatev 2007, 124). We call this *Embodied Identity*: the minimal sense of oneself as an acting and sensing body within a world shared with others.

More complex forms of selfhood arise through intersubjectivity, especially through being seen by others and by participating in shared activities. A rudimentary sensitivity to being watched is widespread among social animals, especially in contexts of threat and fear (Hadjikhani and de Gelder 2003). Yet this often remains affective rather than cognitive, and it does not imply an understanding of another's perspective. Among great apes, acts of pantomime and competitive gaze following are generally taken to exhibit second-order intentionality: "I see that you see me"; "I see that you see X". Still, this lived sense of being seen by another does not yet imply reflective self-objectification, as when one points to oneself as an entity in the objective world. Instead, it expresses what we term *Self-for-Other Identity*: a lived sense of being perceived by others, without necessarily realising that one is an object among others that can become the theme of shared attention.

Third, *Reflective Identity* corresponds more closely to third-order intentionality. It begins when one takes oneself explicitly as an object, seeing oneself, as it were, from the outside. Participation in cooperative acts of triadic reference, as in being pointed at by others, presupposes at least a minimal awareness of oneself as an entity within a shared world. This should not be understood as a fully developed adult form of self-reflection: reflective identity admits of many degrees, from early forms of self-objectification in infancy and childhood to more elaborate narrative and normative self-understandings. Such behavioural displays therefore indicate the earliest onset, rather than the full development, of socially recognised and collectively constructed identity.

**4.3. Beyond third-order intentionality**

Following the Social Brain Hypothesis, the original Identity Model assumed correlations between increasing cognitive and behavioural complexity, cortical expansion, and orders of intentionality. In this framework, later and more complex forms of identity were interpreted as requiring progressively higher levels of recursive Theory of Mind, so that the development of social identity appeared as a broadly linear, cognitive ascent through increasingly nested forms of mental-state attribution.

This linear extension is now difficult to sustain. Behavioural and fMRI evidence indicates that higher-order mentalising becomes increasingly demanding as recursive depth increases, with longer response times and broader neural recruitment across cortical and subcortical regions, including the insula, posterior superior temporal sulcus, temporal pole, and cerebellum (Lewis et al. 2017). Behavioural studies likewise suggest that tracking nested beliefs or intentions depends heavily on working memory and inhibitory control (Launay et al. 2015). Such findings do not show that higher-order mentalising is absent or irrelevant; they show rather that it is cognitively costly and unlikely to function as a routine, population-wide mechanism for sustaining stable social forms. Earlier studies linked higher-order perspective-taking to social-network size (Stiller and Dunbar 2007), but there is little evidence that fourth-, fifth-, or sixth-order recursion is what supports the formation of groups, norms, or institutions. It is therefore also unlikely that such recursive depth would leave stable, archaeologically detectable traces in its own right.

The most influential accounts of cultural and institutional emergence instead emphasise shared intentionality, common knowledge, and norm-guided cooperation as the critical thresholds for

human-like culture (Tomasello et al. 2005; Rakoczy et al. 2008; Tomasello 2010; Schmidt and Tomasello 2012; Tomasello 2021; O'Madagain and Tomasello 2022). Higher-order reasoning may contribute to occasional elaboration, but the persistence of institutions depends more on common norms, roles, and material-cultural scaffolds than on routinely iterating mental states to depth four or beyond.

We therefore treat third-order intentionality—the capacity to recognise another's intention to direct or share attention—as the crucial threshold for joint reference and shared intentionality. Once this capacity is in place, individuals can jointly point to and name things, coordinate actions, transmit practices through instruction, and establish shared norms. These capacities underwrite cumulative culture and the social transmission of practices, which in turn would gradually stabilise identities.

The important point, however, is that what follows from this threshold is not an inward deepening through further mental recursion, but an outward expansion of the shared world in which selves can act, be seen, take up roles, and become recognised. We take the self to be less a psychological or cognitive possession, or something disclosed primarily through introspection, than something interpreted and articulated through one's situated activity in the world (Carruthers, 2011). Self-knowledge is ordinarily interpretive, grounded in awareness of one's circumstances, behaviour, and sensory imagery rather than in privileged access to transparent inner states. Language, ritual, tools, and institutions expand and restructure this field of possibilities, shaping what one can do, how one can appear to others, what roles one can occupy, and how one can come to understand oneself.

The expansion of selfhood is therefore driven primarily by the expansion of socially available worlds of action, role, recognition, and institution, not by the addition of inner representational layers. We call this process *scaffolded self-expansion*: the growth of selfhood through the cultural and material elaboration of shared worlds. On this view, beyond the threshold of third-order intentionality, the principal drivers of identity are cultural and material scaffolds: norms, language, tools, rituals, and institutions. We therefore collapse the upper tiers of the original Identity Model into these culturally scaffolded identity processes, shifting emphasis from cognitive hierarchy to shared practices, demography, and material–symbolic mediation. In the following section, we distinguish two further identity categories: *Role–Norm Identity* and *Narrative–Institutional Identity*.

## 5. The Scaffolded Identity Model

The Scaffolded Identity Model is presented in Table 1 below. Our categories build on established distinctions between individual, relational, and collective dimensions of selfhood, thus situating the model within mainstream identity theory. The model illustrates how identity formation unfolds through successive layers of embodied, self-for-other, reflective, role–norm, and narrative–institutional processes, sustained by material and behavioural perpetuation, rather than by higher orders of intentionality. Table 1 summarises these relations, followed by discussion.

| Identity Category | Core Process | Cognitive Basis |
|---|---|---|
| **1. Embodied Identity** | Pre-reflective bodily self-awareness: the felt sense of "I can," grounded in embodied agency, affectivity, and exposure to others. Provides the experiential base for all later self–other distinctions. | **1st order** (non-recursive awareness; affect recognition) |
| **2. Self-for-Other Identity** | Minimal awareness of oneself as being perceived by others; sensitivity to another's actions and intentions that enables dyadic exchanges, competitive gaze following, and learning through observation, without reflective self-objectification. | **2nd order** (awareness of another's attention without reflective self-objectification) |
| **3. Reflective Identity** | Awareness of oneself as an entity within a shared world: someone who can be seen, evaluated, and recognised by others. May support individual display of skill, attractiveness, status, or competence through material and bodily forms. | **3rd order** (recognising and shaping another's perception of oneself) |
| **4. Role-Norm Identity** | Identity shaped by participation in shared roles and culturally transmitted norms; for example, group member, initiate, craftsperson, or in-law. Identity is mediated by informal institutions, normative expectations, and recurring practices. | **≤3rd order** (shared intentionality, common knowledge, and norm sensitivity enable stable roles and conventions) |
| **5. Narrative-Institutional Identity** | Identity embedded within shared symbolic and institutional frameworks, such as myths, genealogies, cultural roles, and collective narratives. Material symbolism and ritual link individuals to enduring collective narratives and ideational structures. Complexity scales with institutions, fueled by demographic density and intergroup exchange, rather than with further recursive mindreading. | **≤3rd order** (rule-based practices, institutional agreements, and symbolic collective frameworks) |

Table 1. The Scaffolded Identity Model, relating forms of identity to orders of intentionality and material-behavioural forms of perpetuation.

The revised model retains the strengths of the original while replacing the ladder of higher orders of intentionality with social and material scaffolds. The third-order threshold is the key cognitive hinge, with subsequent complexity being understood as a matter of perpetuation: the material and behavioural mediation through which identities become stabilised in practice. The revised model also avoids the earlier implication that material displays must reflect a deliberate self-presentation aimed at influencing others; such readings risk cognitive overinterpretation by interpreting artefacts too quickly as externalised representations of inner mental content. Their effects may arise through repetition, imitation, perceptual salience, shared routines, and copying fidelity, without participants necessarily representing what the display "means" or explicitly grasping the social work it performs (van Mazijk 2026; van Mazijk this volume).

At the base of the Scaffolded Identity Model lies Embodied Identity: the felt "I can" of a living, sensing, and acting body. This involves non-recursive awareness and affective attunement to others, and provides the experiential footing for later self–other distinctions. Archaeologically, it is not diagnostic on its own; it is the condition of possibility for any material engagement at all.

Self-for-Other Identity arises when individuals become minimally aware of being perceived by others, as well as of what others are perceiving. This proto-social awareness enables competitive

gaze following and dyadic exchanges such as pantomime. Moreover, although second-order does not allow the coordination of gazes for instruction, it suffices for learning by observation. By tracking the attention and goal-directed actions of others, an observer can reproduce another's behaviour. This capacity appears to underlie social learning in various extant primates, who acquire skills such as nut cracking or termite fishing through attention to others' actions. It is certainly plausible that similar forms of observational imitation contributed to the transmission of early, low-fidelity knapping traditions (for discussion, see Stout and Semaw 2006; Hiscock 2014; Morgan et al. 2015; Tennie et al. 2017; Toth and Schick 2018; Snyder et al. 2022).

Third, Reflective Identity arises with the emergence of third-order intentionality. At this stage, individuals begin to understand that they exist for others: that they can be seen, evaluated, and recognised as entities within a shared world. Here, identity may become materially mediated, a process the original Identity Model described as perpetuation. Perpetuation is not an additional cognitive tier, but the set of material and behavioural means through which identities endure and circulate.

Displays and adornments that involve conspicuous labour, rarity, or visual-aesthetic effects like symmetry can gradually acquire social significance. Such social significances are often partly associative and perceptual, rather than purely conventional or narrative. They tend to make intuitive sense within cross-group practical activities of hunting, foraging, and craft production. In particular contexts, a lion claw could evoke courage; shells may suggest food abundance or vitality; a well-made handaxe may attest to technical skill or competence. Such objects can become "social instruments" (van Mazijk 2026; van Mazijk this volume), linking practical activity with personal recognition, thereby actively shaping identities within shared practical worlds.

*Role–Norm Identity* emerges when practices become shared and group affiliation acquires significance in contrast to other (sub)groups. Within normative contexts of mutual expectation, individuals assume roles such as member, initiate, partner-seeking, or in-law that structure social relations and obligations. The crucial competence here is not advanced recursive mindreading (fourth- or fifth-order intentionality), but norm sensitivity: the capacity to recognise what counts as appropriate or correct within recurrent practices and to align one's behaviour accordingly. Although symbolic displays may be intentionally crafted to convey meaning, conformity and prestige biases, together with habitual sanctioning, can produce similar outcomes without deliberate intent. Bodies, artefacts, and shared rituals together embody and transmit "how we do things," sustaining normative patterns without explicit formulation.

Lastly, *Narrative–Institutional Identity* arises when practices become organised by shared stories, ritual frames, and more explicit linguistic, ritual, or transgenerational normative frameworks. Myths, genealogies, songs, collective memories, initiation sequences, and other rituals locate individuals within complex symbolic frameworks. At this stage, material culture and ritual bind personal identity to broader narratives and collective self-understanding. Perpetuation may be expressed archaeologically in the formalisation and repetition of material forms: the canonical reproduction of figurines or the persistence of specific iconographic motifs in rock art. It may appear in the maintenance of ritual spaces, in structured depositional practices, and in the slow drift or

conservation of emblematic designs across generations. The following section relates these identity categories more directly to archaeological expectations.

## 6. A heuristic relation of the Scaffolded Identity Model to the archaeological record

As our understanding of cognitive evolution has developed, so too has our understanding of the complexity of the archaeological record. Genetic evidence has revealed extensive introgression among hominin populations, especially during the last million years, while new artefact and site discoveries have continued to reshape interpretations of hominin behaviour (Galway-Witham et al. 2019; Cole et al. 2026). Against this background, Table 2 presents a revised heuristic frame for relating the archaeological and behavioural record to the Scaffolded Identity Model. Crucially, this framework disconnects the Identity Model from Clark's (1961) technological modes, unlike previous versions (cf. Cole 2019), and instead situates cognition within a broader behavioural record across time. It should be read primarily as a heuristic guide to archaeological visibility; capacities such as referential gesture, guided learning, shared attention, and reflective awareness may have preceded their durable material expression by considerable periods.

| Time | Possible Material Culture Evidence | Examples of Indicative References | Cognitive-Behavioural Implications | Identity Category |
|---|---|---|---|---|
| ~+3.3 ma to ~1.8 ma | • Probable organic tool use, although preservation is limited; in line with extant primate tool use as a minimum<br>• Deliberate but non-standardised lithic tool production to create usable edges<br>• No or limited standard form imposition on lithic artefacts. Lithics tool shape largely governed by raw material size, shape, and mechanical flaking properties<br>• Core tool industries dominated by flake removals (< 10 cm) for the Oldowan, or by large flake (>10cm) removals for the Lomekwian<br>• Systematic long-distance transport of raw materials | • **Organic tool use / extant primate analogy** Carvalho and McGrew (2012); Silva and Silva 2021; Bandini et al. (2022)<br>• **Non-standardised lithic production / flake-based systems** Stout et al. (2010); Delagnes and Roche (2005); de la Torre et al. (2003)<br>• **Shape governed by raw material constraints** Braun et al. (2008); Goldman-Neuman & Hovers (2012)<br>• **Core–flake** Harmand *et al* (2015); Schick and Toth (2006); Semaw et al. (2003)<br>• **Long-distance raw material transport** Braun et al. (2008); Reeves et al. (2023); Finestone *et al.* (2025)<br>• **Synthesis (continuity & cultural transmission)** Stout et al. (2019); Key and Williams (2026) | • Material engagement is primarily practical and task-directed, patterns compatible with embodied, goal-directed action, basic planning in raw material selection and use<br>• Long-distance movement of raw materials suggests landscape knowledge, resource memory, and practical mapping of usable materials across space.<br>• Social learning was likely present, including exposure to others' actions and observational learning, but the precise mechanisms of transmission remain difficult to specify archaeologically.<br>• Communication was likely primarily dyadic, affective, gestural, and context-bound, with expanding vocal and attentional repertoires relative to extant apes and possible beginnings of triadic coordination around objects, actions, or resources. | *Embodied Identity* & *Self-for-Other Identity; possible incipient Reflective Identity in contexts of shared practical attention* |
| ~1.8 ma to ~500 ka | • Lithic tools predominantly based on large flakes (> 10 cm) or bifacially reduced cores.<br>• Acheulean Large Cutting Tools (LCTs)—handaxes and cleavers—alongside flake tools and cores remain common.<br>• Variation in LCT form across assemblages reflects differences in cultural practice scaffolded (but not necessarily constrained) | • **Large Cutting Tools (handaxes, cleavers)** Beyene et al. (2013); Lepre et al. (2011); Wynn and Gowlett (2018)<br>• **Imposed form / mental templates** Lycett (2013); Shipton (2019)<br>• **Variation across assemblages (culture vs raw material)** Iovita et al. (2017); Roche et al. (2018); Braun et al. (2019) | • Increasing technical skill, planning depth, and socially transmitted know-how are visible in large-flake production, bifacial shaping, organic technologies, organised hunting, controlled fire use, and wider landscape engagement.<br>• Recurrent Acheulean forms suggest shared practical standards, incipient abstraction, and sustained cultural transmission, even if they do not | *Self-for-Other Identity, with cognitively plausible but archaeologically weakly visible Reflective Identity* |

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| | by raw material quality and availability.<br>• Deliberate imposition of shape and form to LCTs indicates the presence of a mental construct guiding tool shape<br>• Organic artefacts continue to extend technological diversity (e.g., deliberately shaped wooden spears for hunting, digging sticks etc.) alongside the lithic tool kit.<br>• Early prepared core / Victoria West<br>• Controlled use of fire<br>• Evidence for cannibalism within hominin remains | • **Organic tools (spears, woodworking etc.)** Richter and Krbetschek (2015); Stammers et al. (2018); Van Kolshoten et al. (2015); Leder et al. (2024)<br>• **Early prepared core / Victoria West and transitional core working** Johnson and McBrearty (2010); Proffitt (2018); Li et al. (2017)<br>• **Control of fire** Gowlett (2006)<br>• **Mortuary practices and treatment of the dead** Saladie and Rodriguez-Hidalgo (2016) | straightforwardly indicate explicit identity display.<br>• Group organisation may have been increasingly mediated by visual, gestural, and material practices, but without requiring stable symbolic display systems or explicit self-presentation.<br>• Body treatment, where present, may reflect consumptive or practical processing rather than symbolic mortuary intent, as at TD6 Atapuerca.<br>• These patterns make more structured communication, triadic attention, guided learning, and practical perspective-taking cognitively plausible, although such capacities remain archaeologically indirect. | |
| ~500 ka to ~300 ka | • Individual groups may produce artefacts of extraordinary design, such as over-determined handaxes (Wynn this volume), 'giant' handaxes (>28cm long), S-twist handaxes, handaxe pairs, and symmetrical handaxes.<br>• Cultural differences in groups apparent with artefact form.<br>• Prepared core technology (e.g., simple prepared cores and early forms of Levallois) enters the behavioural record, although large flake production and bifacially reduced cores remain important.<br>• Expanded engagement with organic tools (defined and shaped wooden tipped spears), including the potential construction of complex | • **Early prepared-core / proto-Levallois** Johnson and McBrearty (2010); Lycett et al. (2016); Shipton (2022)<br>• **Increasing planning depth / hierarchical reduction** Boëda (1994); Lycett et al. (2016)<br>• **Organic tool use / woodworking** Barham et al. (2023); Leder et al. (2024); Richter and Krbetschek (2015)<br>• **Hafting / composite tools** Wilkins et al. (2012); Wilkins (2020)<br>• **Early pigment use** Barham (2002)<br>• **Mortuary practices and treatment of the dead** Arsuaga et al. (2024); Saladie and Rodriguez-Hidalgo (2016)<br>• **Control of fire** | • Prepared-core and composite technologies indicate advanced planning, technical integration, and socially transmitted know-how, and are compatible with shared attention and guided learning, without by themselves demonstrating grammatical language or explicit symbolic representation.<br>• Long-distance resource movement suggests landscape knowledge, resource memory, and extended mobility or contact networks, without requiring formal exchange systems.<br>• Early marks, pigments, and unusual artefacts may indicate growing attention to visual form, salience, and tradition, possibly contributing to the stabilisation of identity and social roles, without | *Reflective Identity becomes more archaeologically visible in localised or regionally specific assemblages, with possible incipient Role–Norm Identity where material practices show recurrent patterning, group-specific salience, or emerging normative expectations* |

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| | wooden structures (e.g., Kalambo Falls).<br>• Long-distance resource movement<br>• Early evidence of ochre use and collection and early hafting and composite tool manufacture (e.g., *Kathu Pan*).<br>• Possible intentional hominin deposition (e.g., Sima de los Huesos). | Davis et al. (2026); Preece et al. (2006) | necessarily functioning as explicit symbols.<br>• Localised mortuary or depositional practices may indicate emerging place-based or group-specific traditions, while remaining difficult to interpret as fully institutionalised ritual. | |
| ~300 ka to ~120 ka | • Shift toward systematic prepared-core reduction, aimed at producing flakes of predetermined form and size, marking the emergence of specialised toolkits.<br>• Prepared core technology coincides with the widespread presence of composite tools.<br>• Ochre use becomes more recurrent and contextually patterned, suggesting possible social, bodily, or identity-related applications cementing cultural differences between groups.<br>• Possible intentional hominin deposition (Rising Star) | • **Prepared-core technologies / Levallois** McBrearty and Brooks (2000); Johnson and McBrearty (2010); Lycett et al. (2016); Shea (2017)<br>• **Composite technologies and hafting** McBrearty and Brooks (2000); Scerri (2013); Wilkins et al. (2012); Wilkins (2020)<br>• **Ochre procurement and pigment use** McBrearty and Brooks (2000); Scerri and Will (2023)<br>• **Regional technocomplexes** Scerri (2013); Scerri (2017); Scerri et al. (2018); Scerri and Will (2023); Will and Scerri (2024)<br>• **Behavioural diversification and cultural traditions** Dusseldorp et al. (2013); McBrearty and Brooks (2000); Powell et al. (2009); Grove (2016)<br>• **Mortuary practices and treatment of the dead** Berger et al. (2023, 2025); Fuentes et al. (2023, 2025); Martinón-Torres et al. (2024); Saladie and Rodriguez-Hidalgo (2016) | • Hominin groups show increasingly stable traditions of making, using, and transmitting forms, suggesting shared practical standards and common expectations about artefact production.<br>• Prepared-core and composite technologies indicate advanced planning, technical integration, and socially transmitted know-how, and are compatible with shared attention, guided learning, and increasingly structured communication.<br>• Communication likely involved increasingly integrated vocal, gestural, and visual repertoires; grammatical language may have been emerging or present in some form, but should not be treated as directly demonstrated by the material record.<br>• Some artefacts acquire social significance through recurrence, recognisability, bodily use, and group-specific practice. Ochre use and other visually salient practices may have contributed to bodily display, affiliation, and role identity formation, especially where they occur | *Reflective Identity and increasingly visible Role–Norm Identity* |

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| | | | repeatedly or in structured contexts. | |
| ~120 ka to ~ < 10 ka | • Continued emphasis on standardised flake production, with predetermined shape and size, primarily for composite tool manufacture requiring minimal secondary shaping.<br>• Expanded use of organic material culture for composite tool creation, including complex tools such as points, harpoon heads, needles, and related implements.<br>• Increasingly visually salient and conventionally patterned material culture, including ornaments, beads, pigments, portable art, cave art, figurines, and anthropomorphic or zoomorphic forms.<br>• Construction and use of organic and non-organic structures, including examples such as Bruniquel Cave, suggest organised spatial planning and recurrent habitation, gathering, or ritualised activity.<br>• More widespread mortuary practices, including deliberate burial, modification of human remains, grave goods, ochre use, and other structured treatments of the dead in some contexts. | • **Blade and standardised lithic production** Mellars et al. (2007); McBrearty and Brooks (2000); Shea (2013)<br>• **Composite organic technologies** Golovanova et al. (2010); Henshilwood et al. (2001); Backwell et al. (2008)<br>• **Ornaments and bodily display** McBrearty and Brooks (2000); d'Errico et al. (2010); Vanhaeren et al. (2006); Radovčić et al. (2015)<br>• **Pigments, markings, engravings, cave art** Bossoms et al. (2026); Henshilwood et al. (2002); Hoffmann et al. (2018); Li et al. (2019); Marquet et al. (2023); Marti et al. (2021); McBrearty and Brooks (2000)<br>• **Structured places and architecture** Jaubert et al. (2016)<br>• **Mortuary practices and treatment of the dead** Bello (2025); d'Errico and Vanhaeren (2015); Marsh and Bello (2023) | • Hominin groups increasingly exhibit shared traditions of form, technique, bodily display, spatial practice, and mortuary treatment, indicating durable social norms and group-specific ways of doing things.<br>• Visual display, gesture, material culture, and language likely operated together in sustaining collective coordination, transmission, and social recognition, although grammatical language is not directly demonstrated by any single artefact class.<br>• Ornaments, pigments, images, figurines, and structured spaces may have mediated affiliation, status, memory, ritual, gender, age, skill, or role identity.<br>• In some contexts, mortuary practices, recurrent imagery, ritualised spaces, and durable stylistic traditions suggest the emergence of narrative or institutional frameworks linking individuals to collective histories, cosmologies, ancestors, or group identities.<br>• These practices are not direct evidence of "fully symbolic thought," but of increasingly scaffolded social worlds in which material forms, bodily practices, language, and institutions together sustain identity. | *Role–Norm Identity becomes widespread and archaeologically durable; Narrative–Institutional Identity becomes visible in some contexts through mortuary practices, recurrent imagery, ritualised spaces, and enduring collective traditions* |

Table 2. A heuristic relation between archaeological visibility, behavioural complexity, and the identity categories of the Scaffolded Identity Model. Indicative references are limited because it is not possible to include the entire body of literature that addresses everything in this heuristic model in the current article form. Any omissions are entirely due

to space and readability, not in any way related to the importance of the work. More comprehensive reviews of the hominin behavioural record can be seen in Galway-Witham et al. 2019 and Cole et al. 2026 and references therein.

Table 2 seeks to move the mapping of cognitive complexity against the archaeological record beyond the "cognitive ladder" approach previously tied to Clark's technological modes, and to reframe the interpretation of the archaeological record as an ecological stabilisation of identities within evolving social-material niches. In this reformulation, the "higher orders of intentionality" that long dominated the cognitive-ladder model are reinterpreted as thresholds of shared intentionality, interwoven through varying degrees of material mediation. Cognitive and social complexity are thus expressed through the way practices, forms, and social effects become stabilised and transmitted through materials, styles, and bodily routines, often without explicit reflection or an intention to communicate a specific signal.

The Scaffolded Identity Model is grounded archaeologically through heuristic indicators such as standardisation, role-linked toolkits, emblemic differentiation (following Wiessner's 1983 distinction between emblemic and assertive style), and canonical repetition. Taken together rather than in isolation, such patterns may indicate the material stabilisation of identity.

As with all efforts to link cognition to the behavioural record, not everything aligns neatly with our shifting empirical understanding. Embodied Identity and Self-for-Other Identity remain largely archaeologically invisible and must be inferred through a holistic interpretation of extant primate behaviour alongside early stone-tool traditions. Even if chimp-like "minimal self-for-other" identities leave no direct iconic, indexical, or symbolic traces, they are connected to early tool learning and imitation. Knapping and nut-cracking may involve learning by observation, although their occurrence does not independently demonstrate second-order intentionality; by contrast, intentional instruction may involve mutual gaze coordination and joint attention toward a shared goal, which presupposes shared intentionality. Such dynamics may be archaeologically reflected in Developed Oldowan (2nd-order) and Acheulean (2–3rd-order) contexts, which display coordinated flake removal, percussive control, and cooperative activity reflecting socially mediated toolmaking during the sub-~2 Ma period.

The emergence of Reflective Identity (3rd to ≤ 3rd order) becomes archaeologically visible after ~500 ka, exemplified by the use of material culture for visual display, over-determined handaxes (Wynn, this volume), and early pigment use. In this new framing, both the body and artefacts are employed for associative display—to express skill, fertility, or fitness—, rather than as explicit semiotic codes. Such practices can perpetuate social salience through association and continuity with familiar shared practices. At this level of shared understanding, symbolic function does not yet require a narrative or cosmological scaffold to be effective.

Role–Norm Identity, firmly within the ≤ 3rd-order range, becomes archaeologically expressed when often highly salient materials acquire social legibility. This appears, for instance, in patterned ornament sets and likewise in collective ochre use. Here, material culture embodies and stabilises social roles through repeated, observable routines. Norm sensitivity, rather than recursive mindreading, thus becomes the key stabilising mechanism in social identity construction, giving

rise to intra-group stylistic coherence and inter-group differentiation in material form, use, manufacture, and decoration.

Narrative–Institutional Identity emerges where material practices become embedded within durable frameworks that extend beyond the immediate presence of particular individuals or groups. Their social force depends increasingly on expectations, roles, and narratives that persist across contexts, episodes, and generations. Archaeological expressions may include mortuary traditions, ritual spaces, portable and parietal art, and, in later prehistory, monumental arrangements and canonical or heraldic repetition. In such contexts, material practices become increasingly formalised and standardised, linking personal and role-based identities to enduring institutional and narrative frameworks.

The precise meanings of these practices may remain inaccessible to later observers, and may not even have been fully explicit to their original participants. What can sometimes be identified archaeologically is not the transmission of a "higher-order social signal," but the deliberate or recurrent organisation of materially salient forms within socially structured contexts. Prehistoric art, for example, may remain recognisable as a socially consequential and patterned practice even where its particular semantic, narrative, or ritual significance can no longer be recovered. At this level, identity is no longer sustained primarily through immediate recognition, recurrent roles, or localised practice, but becomes positioned within larger, generatively transmitted frameworks of material interaction, social expectation, narrative, and institutional order.

## 7. Conclusion

The revised Identity Model offers a pragmatic synthesis of cognitive, philosophical, and archaeological perspectives on selfhood and symbolism. Rather than conceiving cognitive evolution as a vertical climb through ever-deeper layers of recursive mindreading, we have reframed it as a process of ecological stabilisation, in which identities are sustained and transmitted through shared material, social, and institutional scaffolds. This view aligns with enactive and scaffolded approaches to cognition, by treating identity as an ongoing achievement of organism–environment coupling, rather than as a purely internal representational capacity.

Within the context of this *Beyond Peirce and de Saussure* volume, our contribution bridges cognitive-archaeological models of symbolism with semiotic and phenomenological approaches that emphasise meaning as enacted rather than represented in the mind. The resulting model aligns the symbolic record not with mental recursion, but with the expanding social and material worlds through which identities become recognisable, reproducible, and durable.

| **Previous cognitive model** | | **Proposed new alignment from papers within this volume** | | | |
|---|---|---|---|---|---|
| **Order of Intentionality** | **Cole** | **van Mazijk and Cole** | **Wynn** | **van Mazijk** | **Cognitive Basis** |
| $1^{st} \rightarrow 2^{nd}$ order | (encapsulated) Internal & External identity | Embodied Identity & Self- | Self-marking | | $1^{st} \rightarrow 2^{nd}$ order |

| | | | for-Other Identity | | | |
|---|---|---|---|---|---|---|
| 3rd order | Perpetuated Intex (individual) | | Reflective-Identity | Status-marking | | 3rd order |
| 3rd/4th order | Perpetuated Intex (group) | Collective & Abstract Identity | Role-Norm Identity | Group-marking | Practice-embedded social instruments | ≤3rd order (shared intentionality, common knowledge, and norm sensitivity enable stable roles and conventions) |
| 3rd / 4th/ 5th order (as scales of we-marking ramp up from: handaxes → art) | Perpetuated Abstract (group) | | Narrative-Institutional Identity | Group-marking (that includes social convention) | Frame-embedded social instruments | ≤3rd order (rule-based practices; institutional agreements; fully symbolic collective frameworks) (as scales of we-marking and narrative institutional identity ramp up from: e.g. handaxes → art) |

Table 3 situates this revision alongside earlier formulations of the Identity Model and the complementary proposals developed by Wynn and van Mazijk in this volume. Together, these perspectives highlight a conceptual movement from cognitive hierarchy toward social-material stabilisation.

The central claim of the Scaffolded Identity Model is that increasingly complex identities do not require increasingly deep recursive cognition. Instead, identities become more complex as the shared worlds in which individuals act, are recognised, assume roles, and inherit narratives become more materially, socially, and institutionally structured. This reframing reflects a broader disciplinary shift: from viewing artefacts as direct reflections of language or symbolic cognition to recognising them as participants in the constitution of identities and social collectives. Future work should refine this alignment empirically, for example by examining whether standardisation, emblemic differentiation, contextual clustering, and canonical repetition covary with demographic scale, network density, and the organisation of social roles. Experimental research on social learning, transmission chains, and norm compliance could further investigate how material practices acquire social efficacy and stabilise identity across individuals, groups, and generations.

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There are no competing interests to declare

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