Birth of a Morph

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Morphemes are the atoms of language, undecomposable units of form and meaning. In contrast to growth points or GPs, proposed dynamic units, they are fixed, repeatable, listable, and bind form and meaning together by convention. They also have combinatoric potential, in the sense that they acquire syntagmatic values (values that exist only) in combinations. Non-morph gestures have none of these properties and thus make an interesting contrast to morphs, especially if we can observe the birth of morph properties out of gestures. (For the growth point, see McNeill & Duncan 2000; for static and dynamic dimensions of language and how they relate to the GP, see McNeill 2005.)

Emergent morphs

Whence a morph's origin? It is almost impossible to answer the question with speech alone. Even a novel morpheme like "to Google" fits the established morpheme patterns of English. A different approach is to study morphemes in gesture and sign language; the emerging signs of deaf children born to hearing parents and successive cohorts of Nicaraguan Sign Language (Goldin-Meadow & Mylander 1984, Senghas & Coppola 2001). It is also possible to find examples of new morphs in the gestures that are created by hearing adults when speech is denied (to be described below, the Snow White ('SW') narration in Ralph Bloom's 1979 thesis; the descriptions of video vignettes in Gershkoff-Snow & Goldin-Meadow 2002). These nonce gestures may reveal a general process of morphs formation that is the same in its essentials to those with spoken morphs and attested signs. To consider gesture morphs however we need to distinguish recurring gestures—metaphors, iconic gestures and catchments—which may look morphemic but are not.

Recurrence

Recurrence in itself is not sufficient for morph status. This is because at least 6 causes of gesture recurrence can be identified, only one of which is being a morph.

▪**Expected metaphoric imagery**, in which a cultural image for a certain meaning occurs in gesture form; these forms tend to recur when the meaning reappears, but they recur not because of standards of form but because the same metaphor recurs. The following illustrations show two examples in a narration that occurred within seconds of each other:

Figs. 1 and 2 here

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Fig. 1. Both hands rotating to present the idea of progression ('the basic plot line').

Fig. 2. Palm up, open hand (PUOH) for a discursive object (what the plot line is), a gestural version of the 'conduit metaphor' (Reddy 1979, Lakoff & Johnson 1980).

Such gestures reveal a cultural metaphor in action, but show nothing of a standard of form, qua form.

▪**Unexpected metaphoric imagery** - an 'unexpected' metaphor is a term for a gesture that does not reveal a cultural norm in itself, but is nonetheless an image of some abstract content that the speaker has created on the fly. An example from one the Canary Row (CR) narrations is the Viv. "it down" gesture, where a downward thrust of Tweety's bowling ball meant, not just that, but more crucially was an image of an antagonistic force directed against Sylvester as he climbed up inside the famous drainpipe.

Fig 3 here

Fig. 3. Hands at start of downward thrust with which to metaphorize the abstract meaning of an 'antagonistic force' (see McNeill 2005 for explanation of the metaphor).

▪**Referential iconicity**, like repeated metaphors, the same iconic imagery can recur without standards of form qua form. The various 'up inside the pipe' provided later in the paper illustrate the phenomenon, where different speakers hit on similar imagery (Fig. 11).

▪**Morphology**, the sole recurrence that does require a standard of form. We will see examples of created morphemes later in the Snow White wordless narrative.

▪**Priming**, in which a prior action makes a similar later action more likely. This has nothing to do with form standards. One might suppose it could provide a mechanical basis for creating them, but even this is doubtful. We shall see in the SW experiment that form standards came first, and did so immediately, and thus could not have derived from priming.

▪**Catchments** are recurring gesture features (not necessarily whole gestures) that materialize a continuing discourse theme. Again, no form standard is present. The 'antagonistic force' theme in Viv/s narration started with the gesture in Fig. 3 and continued through a succession of similarly-shaped two-handed gestures; this continuing bowling-ball imagery emerged each time the antagonistic metaphor theme asserted itself (Fig. 4):

Fig. 4 here

and drop**s it do**wn the drainpipe | and he's **got this** big bowling ball inside him | and h**e rolls on down** into **a bow**ling alley | and then **you hear a** strike

Fig. 4. Recurring similar two-handed gestures in a catchment (= the bowling ball as a metaphor of an antagonistic, contra-Sylvester force). The third panel also illustrates a possible proto-morph by this speaker – an extended index finger – for the character Sylvester (cf. Fig. 11). See McNeill (2005) for explanation of the metaphor.

To summarize, with 6 causes, only one of which is morphemic, recurring gestures alone are not sufficient to confer morpheme status.

What is a morph?

A morph is Saussurian sign: a pairing of signifier and signified, the unsplittable two sides of a coin. This holds for all signs. In addition, a morph must be patterned on two levels – Hockett's duality of patterning: meaning and form (cf. Hockett & Altmann 1968). The signifier may or may not be iconic, but form patterning is crucial. Sue Duncan points out that gestures for the bowling ball scene and others, in contrast, appear to be constrained only by human anatomy and neuromotor potentials, and any variation reflects differences in conceptualization of the episode (pers. comm.).

Because metaphors, reference, catchments (discourse themes) can all create meaning patterns that have no realization as morphs, we must look to form and see if there is morphlike patterning. The question thus is, does the *form* of the gesture meet standards—standards being 'patterns' à la Hockett? Does form *qua* form reflect more than iconicity? Is it possible to have a gesture that violates a standard of form?

To settle the form question, several probes could be attempted; namely,

▪Do people *recognize violations of gesture form*? "OK" with the middle finger on the thumb, instead of the canonical forefinger, is a metaphor of precision but not the sign.

▪If two gestures have different meanings but similar forms, is there some form difference, however minor, added to at least one of the gestures to *maintain distinctiveness*? The addition has no iconic function of its own, as in the crooked little finger of the Warlpiri Sign Language for "truck" (Fig. 5).

Fig. 5 here

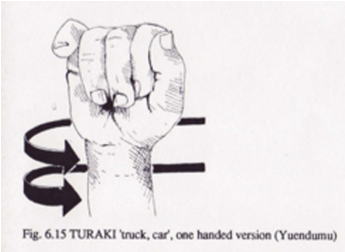


Fig. 5. Warlpiri sign for 'truck', showing elevated small finger to distinguish it from an otherwise similar form for the unrelated meaning of 'child'. From Kendon (1988).

▪Do people *have intuitions of good form*? Neapolitan gestures made 'crisply' imply standards of form. For example, the hand closes to make a *grappolo* or finger-bunch in which "the speaker is trying to clarify or make more specific what is to be considered." This form must be 'made crisply', which implies a standard to which it is held (Kendon 2004). This is also a gesture *metaphor*—in fact, it is a metaphor not unlike the conduit shown by an English speaker in Fig. 2, but unlike the English speaker's gesture form in the *grappolo* is stabilized and held to a standard.

Fig. 6 here

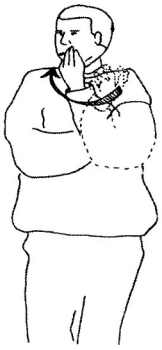


Fig. 6. Neapolitan *grappolo* cultural gesture. From Kendon (2004, p. 230)

▪Are there zones, geo-culturally, where different standards have evolved for speech-synchronized gestures? An example is pointing, which shows different forms across cultures. Pointing in fact may be one of the few gestures in many cultures, not just Naples, in which form standards apply when combined with speech. With North Americans and many others pointing is prototypically performed by the extended forefinger, and while

alternatives are also understood they are not the norm. Elsewhere the norm is a flat hand, and in Laos and elsewhere one norm is lip pointing, shown in the Fig. 7 (Enfield 2001).

Fig. 7 here

Fig. 7. Jahai (Laos) lip point. From Enfield (2001).

The gist of these hallmarks is that morphs are more than iconic or metaphoric gestures—they are also shaped by standards of form. A morph thus implies, among other qualities, that a gesture meets, consciously or not, standards of form and is open to violations, such that changes of form may cancel the morph. It is standards that distinguish morphs from all of the above.

Thus, the question becomes: when do standards emerge?

Morphs are socially-constituted. Given the Saussurian portrayal of *langue*, this is intrinsic to their origin, and implies a social context (real or virtual) when used. Morphs cannot exist outside the domain of the shareable (cf. Freyd 1983). Several things seem to take place all at the same time when gestures bear the brunt of social interaction without speech. Attention to form qua form may be the trigger for all these developments, and form standards are the infrastructure that carries the ensemble.

A communicative exchange induces a crucial attention to form, and it was present in both the Snow White (SW) and vignettes settings. Without communicative exchanges there is minimal attention to form qua form, no standards, and recurring gestures are at most 'proto-morphs', as observed in the Canary Row to be described below (cf. Fig. 11). The speed—virtually, the immediacy—with which the King and Queen morphs in the SW narration take form suggests a built-in capacity. Although the crown, breasts and muscles the narrator had used to indicate crowned-head and male/female features are perfectly familiar, they were cultural norms that the novel morphs drew upon and not features of language transferred from English. The contrast and internal organization of the signs for King and Queen were *sui generis* and instantaneous. In a post-experiment interview the SW narrator could provide Ralph Bloom with descriptions of the gestures and their distinguishing features, so the contrasts had solidified into form standards (and the narrator criticized the listener's variations of these forms as 'violations').

In SW, morphs, the Queen morphs especially, exhibit a number of morph hallmarks: stable

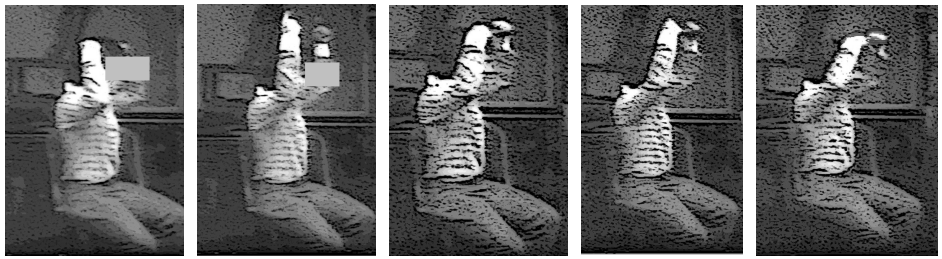
and repeatable (the essential distinguishing features are maintained throughout—although there is streamlining, which is different from lack of stability), analytic rather than holophrastic, and extractable from context (the gesture appears in the same form and with the same value in multiple contexts). There was also dialogic use of 'King' and Queen by the listener. The crucial 'has-breasts' distinction was preserved, as was the two-morpheme structure of each gesture ('has-crown' + 'has-muscles' or 'has-breasts') but a 'dialect' difference appeared in how the 'has-crown' and 'has-muscles' features were formed by the listener—the first without revolution at the head, the second with a downward slice with the hands in front of the chest rather than the original 'muscle-man' posture. The primary speaker had used 'flat chested' himself just before the listener's initial occurrence but did not continue with it. So the listener mainly reduces features used by the speaker. In effect, this was a spontaneous replication of languages in contact at a linguistic boundary. It could be a 'dialect' difference arising in his sitation, as the listener does not use the 'has muscles' feature at all. The meaning of Morph 2 may thus have shifted along with the form shift to something like 'flat-chested' or 'has-*no*-breasts' for King, losing touch with the original 'has-muscles' meaning. So linguistic drift was set in motion, occasioned by 'contact'. Had the listener been required to use this morph set with fresh listeners, a kind of experimental migration, a new branch of the original language could have been set in motion

Figs. 8, 9, 10 here

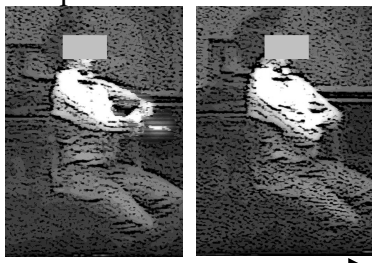
Clips from Ralph Bloom's "Snow White" wordless narration

Initial "King" and "Queen"

KING

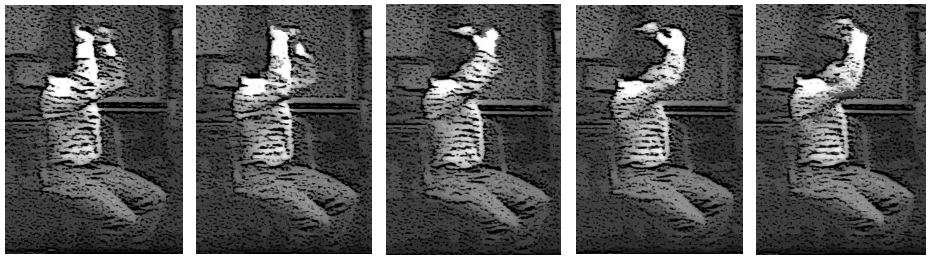


Morph 1 "has crown" →

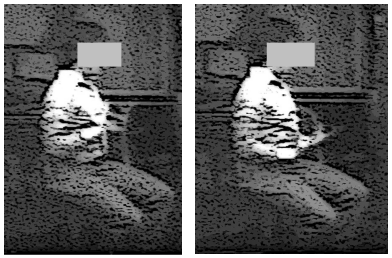


Morph 2 "has muscles" →

QUEEN



Morph 1"has crown" →



Morph 2 “has breasts” ⟶

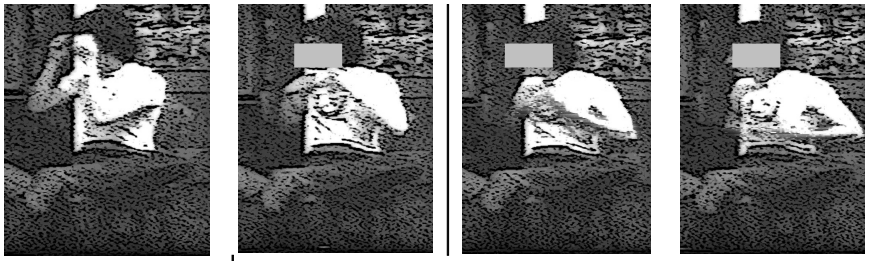
Fig. 8. First occurrences of King and Queen morphs. The gestures are two-morph combinations. Note the immediate contrast of Morph 2: ‘has-muscles’ vs. ‘has-breasts’. Morph 1, ‘has-crown’, is the same. The two hands rotate around the head, forefingers pointing down, moving up and down as they rotate. The spatial head vs. torso distinction and pointing vs. cups for Morph 1 and Morph 2 are maintained despite later streamlining (see next example). The duration of “King”, the first gesture of the pair, was 4.3 seconds. “Queen”, the second, was down to 2 seconds, and this acceleration continued. (SW gestures from Ralph Bloom.)

Later ‘streamlined’ Queen

Fig. 9. A later abbreviated “Queen”. The ‘has-crown’ morph is made with a single hand and only a partial revolution; the ‘has-breasts’ morph is two still cupped hands but now rotates inward and is not held down with palms upward. The changes improve speed but also reduce iconicity, so already some movement has begun that could, possibly, end in arbitrariness. Duration is down to slightly more than 1 second for the entire two-morph “Queen” combination, about the span of a spoken word. The head-torso distinction is still present and indeed was never lost during the entire narration.

Listener's King and Queen

KING



Morph 1 "has crown"

Morph 2 "has no breasts"

Morph 1 "has crown"

Morph 2 "has breasts"

QUEEN

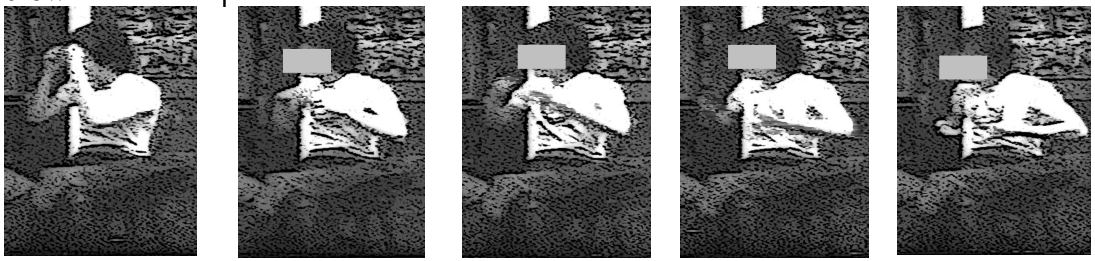


Fig. 10. The "Queen" and "King" morphs in a dialogue by the listener. He was attempting to clarify which character, King or the Queen, the narrator had just gestured. The Morph 1-Morph 2 distinction is preserved but a 'dialect' difference has appeared in the 'has-crown' and 'has-muscles' features—the first without revolution, the second a downward slice with the hands in front of the chest. Morph 2 may be an instance of 'language drift', shifting to something like 'flat-chested' or 'has-no-breasts', away from its original 'has-muscles'. The speaker had just before used 'flat-chested' in combination with 'his usual 'has-muscles' and crown'. The listener did not arrive at these features himself, and this seems to be the essence of linguistic drift triggered by contact in microcosm. If so, it suggests an even more robust role for language contact in the diversification of languages.

Gesture families: Preliminary-morphs, ephemeral-morphs and co-opting

As mentioned, in CR, despite minimal intended communicative functions, gestures show a tendency to stabilize on certain forms—in Viv.'s and Jan's narrations Sylvester with a single-finger (pointing) hand, Granny with a loose open hand approximating the form called the 'B-hand' in American Sign Language notation nomenclature, Tweety with character viewpoint and various handshapes—but the forms are inconsistent. Non-single-finger handshapes are also used for Sylvester and the single-finger handshape appears for other references. In short, there is gravitation to a certain form, often with an iconic start (the first of the Sylvester single-finger gestures was both deictic and iconic for squeezing into the pipe), but the form does not become fixed nor is it reserved for one meaning. If we call this polysemy, it is far beyond what one expects in a functioning communicative system. In these respects it is a preliminary-morph not yet over the threshold of a word or sign.

Oddly, proof of this status is that similar gestures appear in different speakers who, of course, were not in communicative contact and so could not have tested the morph for communicative validity. The gestures form what Kendon (2004) terms 'gesture families'—gestures sharing one or more form features that cluster around some core meaning. Kendon's examples came from the Neapolitan gesture culture and were centered, it appears, on one kind or another of a metaphor. Thus, "[a] context-of-use study of Open Hand Prone gestures suggests that they all share the semantic theme of stopping or interrupting a line of action that is in progress" (pp. 248-9). We have here perhaps another aspect of morph birth, the co-opting of a form by some initially incidental meaning, which then becomes the final meaning: so the rising single-finger hand for Sylvester that initially meant ascending and compressing came to mean, in later occurrences, just Sylvester, unascending and unsqueezed (however, in every case, deixis and in one case an interpretation as an alternate iconic gesture is also present, so the preliminary-morph status of the Sylvester 'sign' is far from certain). Fig. 11 shows CR gesture families in their order of emergence. In the 'Viv.' series, which is the only long one, we see the initial iconicity of the gesture and its later focus on what was at first an incidental meaning but that later became the sole meaning (preliminary-morphs are ephemeral not outlasting—one presumes—the experiments in which they occurred).

Fig. 11 here

Jan.	**V. J.**	**Viv.**

and he tries to <um> **climb up**

this time he tries to go up **ins**ide the rain gutter (from a later scene)

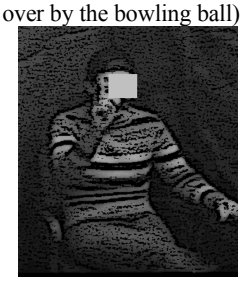
and then he* then you **see him on some electrical wi**res (could be simple deixis)

the* <uh> **cli**mbs up the drainpipe

he tries going **up** the in**sid**e of t**he drai**npipe

and he come**s out the bot**tom of the drainpipe (later part of above scene – could be primed)

and h**e rolls on down** into **a bow**ling alley (also part of the two-similar-hands 'bowling ball' catchment (see Fig. 4), simultaneously showing, in one gesture, both Sylvester as a character and the drama in which he is taken over by the bowling ball)



and that catapults him up (could be simple deixis)

he comes s**winging throu**gh on a rope

		(could be iconic for the rope)  **little** hat (could be simple deixis)  and he's **walk**ing on it (could be simple deixis)

Fig. 11. Possible 'Sylvester' preliminary/ephemeral-morphs in Canary Row narrations by 3 speakers

Fig. 11 may also hint at something in the shadows of Neapolitan gesture history with an initially iconic gesture or instrumental movement (such as grasping or squeezing something) co-opting an initially incidental metaphoric meaning (such as, 'the *essential* thing'—the *grappolo* cultural gesture), and evolving in a way not unlike Fig 11.

Birth of syntagmatic values

We can take this analysis a step further. Not only morphemes themselves but the syntagmatic values of morpheme combinations can be seen emerging *de novo* when speech is denied. There is some evidence that a strong tendency to subdivide and rearrange semantically complex meanings—ingredients of construction formation—suggesting, not specific constructions, but a cognitive ability to create them almost instantaneously. Current-day humans, not deaf but not allowed to speak, devise multi-gesture descriptions. This is not surprising in itself, but it is important that these gesture descriptions appear to involve de novo syntagmatic values; not transferred from a given language. The values show regularity beyond any iconicities.

With intransitive actions, three sequences occur with some frequency (Gershkoff-Stowe & Goldin-Meadow): S-M-A, M-S-A, and S-A-M (S = 'stationary object', here an ashtray; M = moving object, here a doll; A = action, here an arc with somersault). These sequences correspond to different information packages or 'constructions':

Table 1 here – exactly in this position

Table 1. spontaneous, new syntagmatic values in gesture constructions

'Construction'	**Sequence**	**Example**
MOTION (increasing activity)	S-M-A	ashtray-doll-somersault
LOCATION (where action occurred)	M-S-A	doll-ashtray-somersault
RESULT (end-state of action)	S-A-M	ashtray-somersault-doll

The participants in the experiment were describing video vignettes showing, in this instance, a doll seeming to somersault through the air and landing in an ashtray comparatively the size of a sandbox (a Ted Supalla 1982 ASL verb of motion vignette).

The hint of syntagmatic value in all this is that the same 'M' (doll) gesture, for example, has different values in different combinations:[3]

doll is 'moving-object' in the Motion package; the 'phrase' is M alone.

doll is 'at-a-location' in the Location package; the 'phrase' is (M-S).

and

doll reaches 'end-state' in Result; the 'phrase' is (A-M).

To experience these syntagmatic values, we recommend mimicry—try performing the sequence of gestures in each row of the table, while thinking of them as Motion, Location or Result, respectively. Only the S-M-A order is iconic (the sequence corresponds to increasing activity). So it may indeed be possible to have new syntagmatic values created in gestures without speech. They come forth seemingly automatically.[4] Each syntagmatic value comes with a paired significance (motion, location, result), and the basic property of a signifier-signified combination is also emerging.

Do syntagmatic values emerge with speech-synchronized gestures in CR? *No*. Instead, CR narrators combine images to enrich an image but this does not create values that exist only in the combination. In Fig. 12, the speaker produced two images of Tweety placing the bowling ball in the pipe, the second after a question by listener. The imagery is elaborated and shows increasing iconicity—a value intrinsic to the imagery itself. It is not a new value dependent on combining it with the first image, and this is the very opposite to a syntagmatic value that comes only from the combination.

Fig. 12 here

[3] An insight due to Amy Franklin: If the same gesture appears in different combinations, and has different values, this could be evidence of syntagmatic value.

[4] All the more striking, then, that gestures *with* speech are global and (especially) synthetic—resisting, in other words, construction-like tendencies when combined with speech. Cf. Goldin-Meadow et al. (1996).

and ∅*tẓ* throws a bowling ball down in the* the thing

Listener: where does he throw the bowling ball?

it's one of those gutter pipes and he throws the ball into the top

Fig. 12. Illustrating the non-syntagmatic combination of gestures. Left hand joins right hand in second panel for elaboration of entering-the-pipe imagery triggered by listener's query. The 'value' of the left hand derives from the image as a whole, not from the combination.

Ritualization

The 'Queen' sign offers the best window on how an initially iconic morph can, over time, lose iconicity. The driving force is ritualization. 'Queen' never loses the distinctive feature of 'having-breasts' but the other feature, 'crown', which is non-contrastive, although it never disappears, steadily turns less iconic. Fig. 9 showed some of this process; Fig. 13 shows a more compete case involving the two hands circling up-and-down which changing to a single hand sweeping across the brow. The order of gestures also changed to 'breasts'-'crown', and this made possible unbroken segues to succeeding gestures—something like fluent signing.

Fig. 13 here

Summary and conclusions: Birth of the static dimension

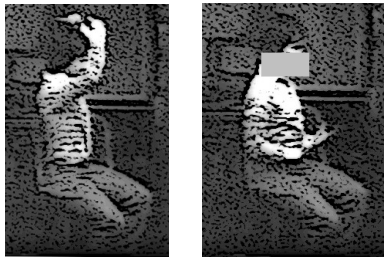
We have tested the conditions under which the morph/syntagmatic-values upper bound is reached, and observe that it is unattainable when conditions are less than favorable (i.e., there's speech). Morphs have two properties that we deem essential. One, as described, is maintenance of stable recurring forms held to standards. The second is the potential for syntagmatic values. We saw syntagmatic values emerging in the the Gershkoff-Stowe & Goldin-Meadow experiment.[5]

The generalization that fits the cases where morphs and syntagmatic values do emerge is *absence of speech*, and here form comes into its own. How does an absence of speech have

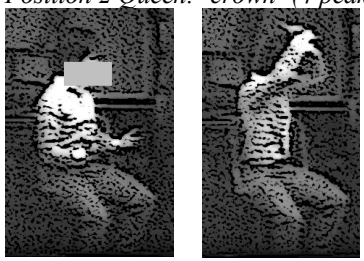
[5] Although not demonstrated, syntagmatic values occurred also in SW, where gestures were often combined and took on syntagmatic values. But these values were in constrictions transferred from English and did not strictly speaking show the creation of novel values.

these effects? We suggest four factors (in possible causal order):

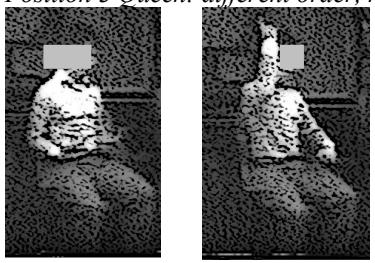
1. Release of gesture from the imagery-language dialectic of the growth point. This seems essential, since otherwise gestures are strongly constrained to maintain a semiotic opposition to language, away from any kind of language-like morph status with combinatoric potential.
2. Increased awareness of gesture as a symbolic medium. Without speech attention naturally falls to gesture as the sole channel, and this in itself can foster morph and combinatoric status.
3. Swerving to pantomime and other points on Gesture Continuum (see McNeill 2000). As part of the same focus on gesture as the sole channel of communication, the speaker resorts to mime, and this has properties of combination and recurrence of its own.
4. Ritualization or streamlining to bring gestures in line with the temporal parameters of



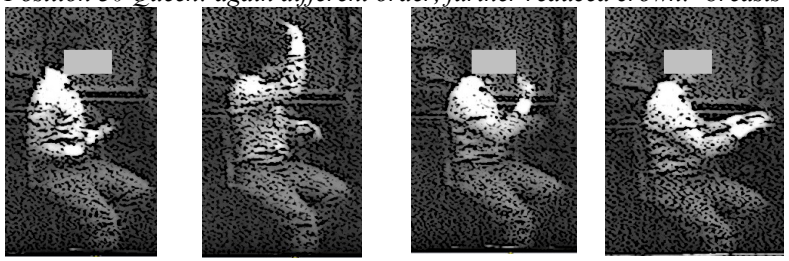
Position 2 Queen: 'crown' (4 peaks) – 'breasts'



Position 3 Queen: different order, reduced crown: 'breasts' – 'crown' (2 peaks)



Position 30 Queen: again different order, further reduced crown: 'breasts' – 'crown' (points at head)



Position 39 Queen: new order continues 'breasts' – 'crown' (hand sweeps over brow); then (third panel) segues to following gesture, left hand rising to meet

downward moving right hand; and finally (fourth panel) the start of a new gesture seamlessly flowing from the preceding, much as in fluent signing.

Fig. 13. Ritualization of "Queen" over 39 occurrences. In words, the distinctive 'has-breasts' feature never disappears; the order changes from 'crown-beasts' to 'breasts-crown', probably because the 'crown' undergoes significant reduction (2 hands to 1) and streamlining, which in turn promotes unbroken motion into following gestures—a syntagmatic effect. The 'crown' hand moves down to the front of the body while simultaneously the left hand moves up into the same space, both preparing to make a gesture for 'Snow White'.

communication. This is a motor process. Co-opting iconic or metaphoric gestures by initially incidental meanings (as in the 'Sylvester' possible morphs in Fig. 11, or the Neapolitan *grappolo* in Fig. 6) is semantic; both are needed for morph birth.

The result of this chain of causation can be morph segmentation and syntagmatic combination, and the beginning of new elements of language. Interestingly, Neapolitan gestures are only partly morphs according to this scheme; they have stability and form standards as would be expected, but not gesture-gesture combinations, and thus do not partake of syntagmatic values with other gestures (in this, they are less morph-like than the spontaneous vignette experiment morphs). We attribute this to the presence, at least potentially, of speech with these gestures. In terms of the chain, we would say that morph segmentation can be reached without combination but combination presupposes segmentation (logically necessary, in any case), and syntagmatic values may not be reached all when speech co-occurs and regularly appear when it does not (the vignttes, home signs, SW and the Nicaraguan sign language).

In an imagery-language dialectic or GP (see McNeill & Duncan 2000, McNeill 2005) an idea is embodied in contrasting semiotic modes simultaneously, the segmented and analytic and the global and synthetic—linguistic and gestural respectively. We think it would be interesting to consider the hypothesis that any gesture morph or gesture combination is possible, so long as it does not interfere with this dialectic. This allows the possibility of gestures, such as the Neapolitan gestures with their own morph status, to be in an imagery-language dialectic, so long as they are able to contrast semiotically with synchronous linguistic forms. An illustration of this possibility is Eve Sweetser's demonstration (in the ISGS 2007 symposium) of a combination of emblems each meeting some form standard thatwas still global and synthetic as a whole in its combination with the spoken content. To quote her abstract,

> "In one example, a lecturer says he will stop talking, and metaphorically cuts off the talking process with a cutting gesture parallel to the front of his body (cf. Kendon's (1995) STOP gesture). But he cuts with a pointing hand, pre-formed for a following indexical point at the audience as he says interact with you, and then for a temporal point at the floor as he says I'll do that here (='now'). This STOP gesture has rich conventional componential structure, even though its interpretation depends on accompanying speech."

The whole seems a metaphor that is itself derived globally, not compositionally. Thus, even though the elements are conventional, a dialectic of semiotic opposites appears possible that was not a bilingual acrobatic performance. The set-up was apparently this: Time To Take Questions: Must Catch My Plane (specifying the part after the colon as the field of oppositions the GP differentiated; the GP had significance as a differentiation of this need-to-travel field).

Merely having symbols does not create morphs. A crucial condition is that gestures are the sole vehicles of communicative exchanges, as in SW and the vignettes (plus home signs and the Nicaraguan sign language). When gestures accompany speech, as in Canary Row narrations, they can recur but are cut loose from consistent meanings and are not maintained. Communicative exchanges induce attention to forms, from which emerges analysis, repeatability and combinations. And partners adopt morphs—the SW listener used the morphs the speaker had created. To spin the metaphor, communicative exchange

is midwife to the birth of standards and morphs.

How does communication foster the emergence of standards and syntagmatic values? What has been termed 'shareability' seems crucial (Freyd 1983)—constraints on information that arise because it must be shared. Constraints because:

> "It is easier for a individual to agree with another individual about the meaning a new 'term' (or other shared concept) *if* that term can be described by: (a) some small set of the much larger set of dimensions upon which things vary; and (b) some small set of dimensional values (or binary values as on a specific feature dimension). Thus, terms are likely to be defined by the presence of certain features." (Freyd 1983, p. 197, italics in original).

Shareability thus produces discreteness, repeatability, and portability—the semiotic qualities of morphs. This creates a static dimension of language—on the *static* dimension, language is *a thing, not a process.* A homely but not inaccurate word for this is the 'thinginess' of language. Thinginess is the framework of nearly all contemporary work on grammar as well as the classic Whorfian hypothesis (Whorf 1956), with its focus on 'habitual thought' (a static infrastructure of thought; cf. McNeill 2009). On the *dynamic* dimension, language is *a process, not a thing*. This dimension could be termed the 'human activity' of language. A historical figure associated with this tradition is Vygotsky.

In her concluding footnote, Freyd speculates that shareability may be relevant to the intrapsychic workings of individual minds, the dynamic, as well as to the interpsychic relations between individuals, the static, and this we also posit at the moment the SW narrator or a vignette subject created a novel gesture form with which to communicate events involving objects to his/her listener.

Although the static and dynamic have been parceled out in distinct traditions, linguistics and some kind of psycholinguistics of activity, they share the same communicative origin. Unlike a generative model which says that performance is carried out by 'applying' or 'using' competence, and unlike the Saussurian model, which defines *parole* at the residue after subtracting *langue* (the systemic aspects) from *langage* (the totality of human communicative potential), the GP defines the dynamic as powered by the opposition of unlike semiotic modes for the same idea, a dynamic in which the static dimension is an essential ingredient. The dynamic is impossible without the static, and vice versa.

Rethinking the morph

The Saussurian sign, the socially-constituted mating of a signifier (vocal or manual) and a signified conceptual content, is intrinsically static, as Saussure himself (or his posthumous followers) expounded. But is this a truth or is it itself a convention that the 'sign'—and hence the morph—is some kind of object? That is, the true 'static' element is the method of 'freezing' language synchronically, as a means of analysis, but *language* is not an'object'. From this perspective we see standards of form, which we have adopted as the *sine qua non* of the morph together with the remaining criteria of morph status earlier mentioned (intuitions of good form, preservation of form differences, violations of form canceling the morph), as standards of *actions* rather than of entities in some kind of synchronic space. This makes the morph into a template for behaving. Structured behavior (we believe) is is not ever meaningless, so a template would naturally include the two sides, the signifier and signified, but they are no longer 'sides' and are now regarded as

sedimented meaningful actions guided by templates. If we adopt this perspective, the synchronic method, the mainstay of linguistic analysis, comes under scrutiny too. It devolves to uncovering the intuitions of 'good', that is, socially-constituted, conventional (behavioral) forms. Intuitions play a role by signaling that speech (or manual sign) actions are "the way we do things around here". Intuitions can be taken to be the individual's awareness of these standards, and may correspond to highly entrenched action patterns in the motor orchestrating parts of the brain. The classic *langue* ('competence')-*parole* ('performance') distinction is replaced by the idea of actions meeting standards, and the traditional psycholinguistic position that 'performance' is the never-perfect rendition of 'competence' loses its sense: an action cannot be derived (with or without limits) from this or any other standard; the relation is different, the action is compared to and guided by it. The GP theory is meant to be a systematization of this multimodal action-based perspective.

(4307 words – text, including footnotes; excluding references, captions and table)

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