From ontological metaphor to semiotic make-believe: giving shape and substance to fictive objects of conception with the "globe gesture"

Da 'metáfora ontológica' à semiótica do faz de conta: dando forma e substância a objetos fictícios da concepção com o 'gesto do globo'

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Abstract: Speakers are moving cognizers who engage in bodily acts of conceptualization. The "globe gesture" is among the most spectacular forms of "manual thinking" (Streeck 2009) used in formal talk. A characterization of the kinesic action typical of the "globe gesture" is first provided that shows how "the image of a bounded, supportable object" is created (McNeill 1992) and set up in gesture space. As conceptual objects are created and masses of semantic substance fashioned, visible shape is given to shapeless mental representations. A powerful semiotic trick is performed with a simple cognitive artifact. Interestingly, a willing suspension of disbelief is required of speakers and listeners who must temporarily give up their rational conceptions of visibility, materiality and palpability to watch the symbolic manipulation of invisible objects. The basic expressive properties of the "globe gesture" are next characterized: outlining and isolating objects of conception; neutralizing semantic specification; establishing a joint focus of attention and imagination; shaping, displaying and unifying content; creating a sense of reality and existence through physical presence. Iconic modifications of the standard metaphoric hand configuration, virtuosic elaborations and creative blends are finally examined before reporting the results of an experimental study of the globe gesture's heuristic properties in a controlled environment. 14 students attending a multimodal "kineflective" seminar used the hand configuration to engage in "choreographic thinking" (Forsythe 2013) and develop a haptic understanding of derivation, nominalization, substantivation, conceptual reification. The globe gesture acted as a facilitator so long as a high degree of generality was maintained but was promptly discarded when words with a strong emotional appeal were introduced (e.g. sadness, madness). Emblems and iconic gestures were spontaneously performed instead.

Keywords: Multimodality. Embodiment. Metaphoric gestures. Ontological metaphor. Conceptual reification. Nouns. Substantives.

Resumo: Falantes são seres cognoscitivos em movimento que se engajam em atos corpóreos de conceptualização. O "gesto do globo" está entre as formas mais impressionantes do "pensamento manual" (Streeck 2009) usados no discurso formal. Uma caracterização da ação gestual típica do "gesto do globo" primeiramente fornecida mostra como "a imagem de um objeto delimitado e suportável " é criado (McNeill 1992) e estabelecida no espaço do gesto. À medida que objetos conceptuais são criados e massas de substância semântica são moldadas, um formato visível é concedido a representações mentais originalmente sem formato. Um artifício semiótico poderoso é realizado com um simples artefato cognitivo. Interessantemente, uma propensão a suspensão da descrença é requisitado de falantes e ouvintes que devem temporariamente abandonar suas concepções racionais de visibilidade, materialidade e palpabilidade para observarem a manipulação simbólica de objetos invisíveis. As propriedades expressivas básicas do "gesto do globo" são caracterizadas como: delineamento e isolamento de objetos de concepção; neutralização da especificação semântica; estabelecimento de um foco de atenção e imaginação; moldagem, exposição e unificação do conteúdo; criação de um senso de realidade e existência através da presença física. Modificações icônicas da configuração metafórica padrão, elaborações virtuosas e combinações criativas são finalmente examinadas antes de relatar os resultados de um estudo experimental das propriedades heurísticas do "gesto do globo" em um ambiente controlado. 14 estudantes participaram de um

seminário multimodal no qual tinham de usar as mãos na configuração do "pensamento coreográfico" (Forsythe 2013) e desenvolver a compreensão táctil de derivação, nominalização, substantivação e reificação conceptual. O "gesto do globo" agiu como um facilitador, desde que um alto grau de generalidade fosse mantido, mas foi prontamente descartado quando palavras com um forte apelo emocional foram introduzidas (ex. tristeza, loucura). Por outro lado, emblemas e gestos icônicos foram realizados espontaneamente.

Palavras-chave: Multimodalidade. Corporificação. Gestos metafóricos. Metáfora ontológica. Retificação conceptual. Nomes. Substantivos.

1 Introduction

> Metaphors, including metaphoric gestures, provide us with the power to think of the abstract in concrete terms – in images of space, form, and movement that are not just concrete images but that become abstract concepts.
>
> David McNeill, *Hand and Mind* (1992: 178)

What is commonly called "reflection" or "argumentation" involves a series of "conceptual acts" (Streeck 2009: 152) that are co-realized verbally and kinetically in oral discourse (Birdwhistell 1970; McNeill 1992,2005; Goldin-Meadow 2003; Cienki & Müller 2008; Calbris 2011; Goldin-Meadow & Wagner Alibali 2013). Thoughts are not simply "expressed," judgments "formed" or connections "established": all are acted out on the socio-cognitive stage. The physicality and dramaturgy of argumentation require the creation and use of a number of props and artifacts, like objects of conception, both visible and invisible, tangible and intangible, which may appear and vanish at leisure, to be theatrically displayed and manipulated in a clever series of *semiotic tricks*. How are these tricks performed and to what avail? A close observation of the properties of the "globe gesture" (Lapaire 2014) might provide some answers, while confirming Lakoff and Johnson's early insights into the pervasiveness of "ontological metaphor" (1980) and Langacker's insistence of the centrality of conceptual reification in language (2000). We start with a formal examination of the kinetic action and hand configuration typical of the globe gesture in a recorded interview of the American choreographer William Forsythe (2009)[1]. We consider its main symbolic and functional properties then discuss the "ontology" of objects of conception and semantic substances. Finally, we look at what can be *done* with the globe gesture, by public speakers in formal presentations or interviews, and by research students in an experimental multimodal learning environment.

2 The "globe gesture" described

2.1 Formal properties

An invisible *globe* is manually shaped that stands for a mental object. A "bounded physical entity" is created that displays "the image of a concept" (McNeill 1992: 145). The referent is named during the process.

Figure 1 – *the dance or* THE PROPERTIES OF THE DANCE Standard globe gesture: the referent concept is "entified" and space "given semantic content" (McNeill 1992: 155-56)

The globe gesture - or "frame configuration"- is typically used to "isolate an abstract object" (Calbris 2011: 332). It is frequently observed in formal interviews when speakers present or discuss some work, theory or situation. Thus the American choreographer William Forsythe is seen making

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[1] Forsythe, William. 2009. Synchronous objects as a choreographic object. In conversation with Professor Norah Zuniga-Shaw. Columbus: The Ohio State University (5'48).

Unless otherwise stated, all the pictures showing W. Forsythe are taken from this interview: https://www.youtube.com/watch?v=uQdZBOVYLdI. A full transcript is provided at the end (Appendix 2).

abundant use of the globe gesture during an interview recorded at the Ohio State University in 2009: 30 times with referent NPs[2] and 3 times with nominalized clauses[3], in less than 6 minutes devoted to the presentation of "choreographic objects." Forsythe occasionally resorts to other metaphoric "gestures of the abstract" that give form to content (McNeill 1992: 145) like finger bunches, cup shaped hands, open palms down, open palms vertical and oblique palms. But he does so more sparingly (10 times in all), as these gestures perform different representational functions.

Figure 2 – *going from* IDEA *to* ACTION
Cup shaped hands: open palm down (entity 1) > open palm up (entity 2) Movement of RH marks shift from one *thing* to the other. Palm orientation is reversed but a hold is maintained on the conceptual substance

Like other "gestures of the abstract" the globe gesture makes a symbolic use of space[4] and manual activity[5]. But it has specific kinetic features that account for its remarkable cognitive and expressive properties: *shaping*, *displaying* and *unifying* content in reasoning or narrative space:

Figure 3 – *I've done* INSTALLATIONS *before*

The globe has a *spectacular* quality that is quite unique in the repertoire of abstract gesticulation. An invisible object is "conjointly delimited by gesture and defined by speech" (Calbris 2011: 117). It is typically fashioned with synchronous, mirrored moves of both hands, which are positioned before the speaker and held up in gesture space. The globe thus becomes the locus and focus of joint attention. A fictive frame is manually established that encloses and delimits a single entity or volume. The substance has no actual physical existence but is metaphorically "of substance" to the speaker. It is a transparent and weightless "stuff," an impalpable "thing." Yet this "stuff" or "thing" is meaningful and given reality through a powerful act of *gestural make-believe.* Something invisible is displayed and looked at, something intangible is held and referred to, and a clever semiotic trick performed.

Figure 4 – *There's books that contain facts,* LITERATURE ITSELF
Speaker as semiotic trickster: holding the intangible

The globe gesture is patterned but is constantly in the process of being deformed and transformed by speakers (see 2.3.2.). Although marked variations in size, width, placement, orientation, hand or finger

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[2] The NP head may be: simple (e.g. *information*) or compound (e.g. *pattern emergence, personality traits*); countable (e.g. *graphs*, *numbers*, *choreographies*) or uncountable (e.g. *information*, *choreography*); singular or plural (e.g. *the dance vs. the dances*). It may or not be used with a main determiner (e.g. Ø / *the choreography*), a premodifier or a postmodifier (e.g. *literature*, *tremendous economic impact*, *worlds of possibility, properties of the dance*). The 781 word corpus contains 67 different N bases, used in 115 NPs.

[3] The nominalized constituents are clauses or predicates, in object or complement position: e.g. *We had no objects to represent that which we now*; *we have a way of basically holding time a little bit more still*.

[4] "The space is not empty. It is full of conceptual significance" (McNeill 1992: 173).

[5] "The hands are symbols in that they represent something other than themselves" (McNeill 1992: 106).

shape may occur, the overall globe configuration is relatively stable.

Figure 5 – *and turned into* ANOTHER VISUAL FORM
The globe gesture and its variants: here the "wider globe"

The basic globe / frame configuration accommodates a wide range of referents. This confirms the metaphoric nature of the gesture: a generic pattern is used that transcends and neutralizes individual word meanings.

Globe **gesture**	*dance-s/-ing* [6/10]; *idea-s* [4/7]; *choreography-ies* [4/6]; *body* [2/4]; *information* [2/4]; *object-s* [1/6]; *knowledge* [1/3]; *fact-s* [2/2]; *(a model of) responsibility* [1/2] ; *explanation* [1/2]; *film-s* [1/2]; *thing-s* [1/2]; *action* [1/1]; *architecture* [1/1]; *(this) aspect (of the structure)* [1/1]; *books* [1/1]; *DVDs* [1/1]; *graphs* [1/1]; *economic impact* [1/1]; *choreographic imperative* [1/1]; *choreographic instruction* [1/1]; *installations* [1/1] ; *literature* [1/1]; *marginalization* [1/1]; *numbers* [1/1]; *organization* [1/1]; *pattern emergence* [1/1]; *personality traits* [1/1]; *(worlds of) possibility* [1/1]; *properties (of the dance)* [1/1]; *revolution* [1/1]; *situation* [1/1]; *team* [1/1]; *timing* [1/1]; *truth* [1/1]; *visual form* [1/1]
Other metaphoric gestures of the abstract	*dance-s/-ing* [1/10]; *idea-s* [2/7]; *choreography-ies* [2/6]; *body* [1/4]; *action* [1/3] ; *something* [1/2]; *depiction (of their personalities)* [1/2]; *furniture* [1/1]
No metaphoric gesture of the abstract	*object-s* [6/7]; *people* [6/6]; *data* [3/3]; *action* [2/3]; *knowledge* [2/3]; *concepts* [2/2]; *demonstrations* [2/2]; *encyclopedia* [2/2]; *library* [2/2]; *project* [2/2]; *structures* [2/2]; *annotation* [1/1]; *approaches* [1/1]; *culture* [1/1]; *examples* [1/1]; *information* [2/4]; *explanation* [1/2]; *film-s* [1/2]; *something* [1/2]; *thing-s* [1/2]; *investigations* [1/1]; *language* [1/1]; *mind* [1/1]; *problem* [1/1]; *state* [1/1]; *time*[8] [1/1]; *work* [1/1]

Table 1 – Nouns synchronized with gestures of the abstract in the Forsythe (2009) corpus[6]

The globe gesture is not tied to a particular semantic category and is not normally iconic of the designated referent[7], unless some element of shape can blend with the globe (Figure 6) or some other notion or process is brought into the picture, thus creating a multi-layered and multi-dimensional gesture (Figure 7).

Figure 6 – *there's DVDs*
The upper section of the globe (metaphoric) is flattened and evokes the circular surface of the referent (iconic)

Figure 7 – *this is a problem in* THE MARGINALIZATION OF DANCE CULTURE
The globe / frame is moved outward and shifted to the periphery of the gesture space. A conceptual entity is metaphorically created and an indication of peripheral status iconically marked

Typically, the globe gesture delineates and establishes an object of conception (or experience) that is nominal rather than verbal, phrasal rather than clausal, abstract rather than concrete. Most of the NP heads that occur with the globe gesture are singular

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[6] When looking at frequency counts, it is important to bear in mind that two or more nouns may fall under the scope of a single gesture. This happens when the referent NP is complex (cf. Fig. 6), or when the shape of the hands is maintained over a complement or modifier (cf. Fig. 7) during a post-stroke hold.

[7] Otherwise stated, it is not depictive, it is not intended to represent or describe features of the referent.

[8] *Time* is used as a full nominal only once but occurs three times in the adverbial phrase "*at the same time.*"

nouns (28), single or compound, which tend to receive an "abstract" or "conceptual" reading (e.g. *organization*, *pattern emergence*). Only a few occur in the plural (9), some with a distinctively "concrete" meaning (e.g. *books*, *installations, graphs*), others prone to a more "notional" understanding (e.g. *personality traits*). Interestingly, the reference made to concrete plural nouns tends to be rather vague and general (e.g. *dances*, *choreographies*, *films*, *installations*). However, the globe gesture creates a sense of *unity* and *cohesion*, as all items seem to be lumped together:

Figure 8 – *there's* BOOKS THAT CONTAIN FACTS
Creating a sense of unity out of multiple referents

The unifying power of the globe gesture is also activated when reference is made to a clause. This happens only on 4 occasions in the Forsythe (2009) interview: "*How do you express this?*"; "*The dance is the explanation*"; *"We can actually slow it up or speed it down."* The speaker displays his own *objects* of inquiry, belief or experience for examination by the listener. The topics are manually presented as *things* to be *considered*, i.e. "looked at together" (Lat. *con-sidere*) in the here and now of speech.

Figure 9 – *HOW DO YOU EXPRESS THIS?*
Globe gesture used with a question

2.2 Ontology of the globe gesture

As the globe gesture is produced, speakers and listeners enter a world of semiotic make-believe. The abstract objects of conception are not actually present, but speakers nonetheless *pretend* to shape and hold them, while listeners *pretend* to see them. Just as fiction requires "poetic faith" and "the willing suspension of disbelief" to accept the "shadows of imagination" (Coleridge 1817), abstract gesticulation requires semiotic faith and the willing suspension of rationality to accept the shape of shapeless mental representations. The invisible becomes visible and acquires presence in the here and now of speech by being manually represented. Creating a sense of *material existence* (in gesture space*)* and *physical presence* (in speech time*)* is the deepest, most essential feature of the globe gesture.

Figure 10 –THE IDEA OF CHOREOGRAPHY ITSELF
Corpus - William Forsythe (2009)
"Giving visible and haptic form to content" (Streeck 2009: 162)

Lakoff and Johnson's landmark description of "ontological metaphors" (1980: 25-32) provides precious insight into the way the human mind treats "events, activities, emotions, ideas" as if they were "physical objects" or "substances." Language allows ontological boundaries to be redrawn between the physical and the nonphysical, as "entity and substance metaphors" take over in the conception and expression of objects of experience*.* Gesture observation adds to the initial body of evidence supplied by the authors, which relied on verbal usage alone. Confirmation is indeed given that "understanding our experiences in terms of objects and substances allows us to pick out parts of our

experience and treat them as discrete entities or substances of a uniform kind" (25).

Figure 11 – … *a way of HOLDING TIME A LITTLE MORE STILL*
Gestural enactment of an "ontological metaphor"
Time construed as an "object" made up of "homogeneous substance"

"Understanding" is clearly at issue here. The globe gesture is one of many ways of modeling "phantasmic" or "quasi-present objects" (Nemirovsky et al. 2012: 130). A thing "understood as materially absent" is made "present and available" to the listener-viewer (161) for explanatory purposes. The manual display of objects of conception and the *gestural enactment* of conceptual reification fuel "cognitive activity" (159) and become "a source of insight" (155) into complex matters: what does the speaker really mean by "*choreographic objects*"? What is Forsythe's theory of "*choreographic thinking*"? As we watch, we join in a shared "process of imagining" (160) that uses "metaphorical extensions of motion" (Özçalışkan 2005: 292). We engage in "imagistic thinking" (Kendon 2004: 98). The shapes and movements displayed in front of us are more than visual-kinesthetic *representations* of thoughts: they are *metaphoric enactments* of cognitive processes.

2.3 Speakers "at thought" (Streeck 2009: 173): the enactive perspective

As speakers make the globe gesture, they do more than just express what goes on in their minds: they engage in "constructive and manipulatory activity" (Kendon 2004: 360), they carry out visible forms of "conceptual action", they perform "conceptual acts" (Streeck 2009: 160). For the world of gesture is first and foremost a world of *doing*, and the

contribution of co-speech gesticulation to the *symbolic action* required by language is an active one: representations are *formed*, ideas are *shaped*, meanings are *produced*, connections are *set up*, statements are *made*. Thus, the globe gesture does not simply code conceptual reification or reveal the mechanism of "entification" (McNeill 1992: 154): it is crucially involved in the accomplishment and display of such processes, it quite literally *gives a helping hand to thought*.

2.3.1. Some remarkable functional properties of the globe gesture

The globe gesture (Lapaire 2014) belongs to a family of "conduit metaphoric gestures" identified by McNeill (1992) and defined in the following terms:

> (Conduits are) metaphors whereby language, meaning, knowledge, art, genre, etc., are presented as bounded containers […] The conduit is actually a family of related metaphors which runs like this: (a) meaning is a substance, (b) the substance is packed into a container, and (c) the container is passed on to a recipient over a conduit. (McNeill 1992: 147)

McNeill makes abundant reference to work by Reddy (1979) and Lakoff & Johnson (1980) on "conduit metaphors" and assigns two main functions to metaphoric gestures that "depict the (conduit) imagery directly": *imagistic* - "the hands create an image of a bounded, supportable object that represents an abstract concept" (149) - and *pragmatic*: the object is "offered" (151) or "presented" (148) to the listener. McNeill's characterization applies neatly to existential constructions like "*There's literature itself*" in the Forsythe interview (Fig. 4). But what may superficially look like an "act of offering" (14) is not necessarily intended to be a generous, selfless gift to the listener. Another beneficiary of the globe gesture is often the speaker himself who uses the globe as a facilitator to "maintain the visible sketch of his idea" and "verbalize" it (Calbris 2011: 340), while keeping his attention focused. All things considered, the globe-gesture is as self-centered as it is other-oriented. One of its main functions is to

establish coordinated mental reference through shared visual contact with a metaphoric object of conception that is on display in the gesture space. The "visual thinking" (Arnheim 1969) and "collective imagining" (Nemirovsky et al. 2012: 130) that speaker and listener engage in is based on the collaboration of moving, watching, talking and reflecting.

The microanalysis of the interview also reveals that the globe gesture is particularly well suited to utterances that present the speaker's novel ideas or original conceptions, as is clearly the case in Forsythe's paradoxical statement: *"But choreography does not always look like a dance"* (Figure 12). An analogy is created between *forming* an opinion or theory and *forming* an object, *making* a point and *making* something, airing special views and displaying some precious artifact. Last but not least among the functional properties of the globe gesture are:

- manually isolating and verbally identifying conceptual entities. What is displayed is brought out in the open and so brought into awareness.
- establishing the reality of the referent. What has substance is true and real. What has shape and location exists.

Figure 12 – *… but* CHOREOGRAPHY DOES NOT ALWAYS LOOK LIKE A DANCE

2.3.2. How to do things with the globe gesture: further elaborations

Once the globe has been fashioned, it either *dissolves* or *evolves*. In his study of "metaphoric gestures in narratives," McNeill (1992) notes that "after creating the object and holding it up" the

speaker may "proceed to break it open", thus revealing "the container's 'contents'" (149). This is often the first stage in a "virtuosic" continuation of the initial gestural action. Calbris (2011) insightfully remarks that "explanatory openings" may take place when speakers want to specify content. As they "open the frame" (331) "an analogical link" is created "between an opening movement and an intellectual kind of development" (338).
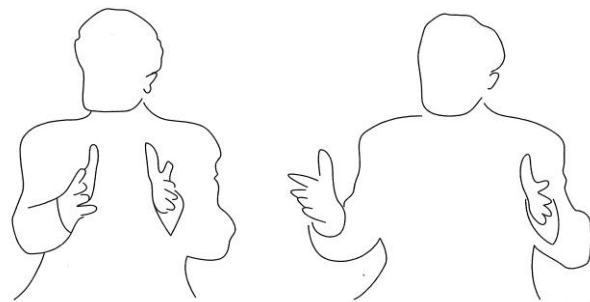

Figure 13 – "Opening a hand configuration to explain something" (Calbris 2011: 334)

"Opening movements," she further specifies, "are associated with the discovery of an interior" so that the gesture "reproduces the experiential schema of discovery" (339). Our own corpus-study reveals that many forms of elaboration are neither revelatory nor continuative in a strict sense. The speaker does not shift from one hand configuration to another but dynamically integrates another hand movement with the globe gesture, so that a fast evolving, global-synthetic *gestural blend* is generated. The hybrid kinetic form that is created combines the properties of the input gestures[9] in a synchronous rather than sequential mode.

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[9] *Gestural-conceptual **blend*** and ***input** gestures* are adaptations of Fauconnier and Turner's theory of conceptual integration (2002) to the semiology of gesture.

Figure 14 – *… we know about PATTERN EMERGENCE*
Globe hand configuration blends with spiral move indicating development

Figure 15 – *… an IDEA THAT PULLS PEOPLE INTO ACTION*
Globe gesture blends with metaphoric motion towards action

Such "virtuosic" elaborations are creative and powerful forms of "spatialized reasoning" (Calbris 2011: 287), which generate "manipulation-based imagery for abstract content" (Streeck 2009: 152). But most of the time "thinking by hand" (151) is done unconsciously, and the question may me asked whether the kinetic features and symbolic properties of the globe gesture might be put to use to develop a conscious, calculated "manual thinking method" (177) in areas where high degrees of abstraction are commonly experienced as daunting by students.

3. Heuristic properties and artistic developments of the globe gesture: nouns as *choreographic objects[10]*

In this section, we report on an *enactive* teaching and learning experiment that was conducted at Université Bordeaux Montaigne (France). The 14

subjects (10 F and 4 M, aged 22-28) were Master of Arts students attending a research seminar entitled "Language, Body and Mind." All were English majors who had just been introduced to the theory of movement. It is important to bear in mind that, as undergraduates, they had studied syntax and semantics, but none had ever been exposed to kinesics or gesture studies before joining the master's degree program in English studies.

Basic instruction and guidance on how to observe and interpret the gestural activity of speakers as they physically engage in communication was provided during the six introductory seminars. Two corpus-annotation sessions were also arranged before the experiment. The stated objectives of the course were the following:

1. describing the form and dynamics of co-speech gesticulation ;
2. comparing the different classification systems;
3. contrasting dimensions of gestural action: patterned (or conventional) vs. free idiosyncratic; regular vs. marked (or enhanced); spontaneous vs. controlled (as in dance, drama or public speaking);
4. collecting, annotating and analyzing data;
5. learning essential facts about the history, epistemology and methodology of gesture studies.

After learning essential facts about movement theory and gesture observation in the seminar room and multimedia lab (weeks 1-8), students were ready to engage in the workshop activities. These have been especially designed to unite science and the arts, under the general title "The Choreography of Speech[11]" (weeks 9-12). The activities[12], it should be noted, go beyond "practical applications." During the workshop sessions, the acts of observing and describing become inseparable from the process of

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[10] A term coined by William Forsythe (2013).

[11] The title given to the workshops was inspired by Asher (1972: 134): "In a sense, language is orchestrated to a choreography of the human body."
[12] E.g. "acceptance and rejection in word and gesture"; "the bodily grammar of interrogation"; "moved by negation".

experiencing. The whole body engages in a dynamic and fully immersive experience. The seminar becomes a *seminar in motion,* where perception and thinking, speaking and moving, doing and understanding, blend into a single kinesic and reflective experience*.* The "teaching and learning space" becomes (in our own words) a *kineflective space* where thinking becomes inseparable from motion, as participants consciously take up the dynamic role of *speakers, movers* and *cognizers*:

- to observe how the socialized human body moves when communicative and representational acts are performed on the social stage;
- to experience the physicality, performativity and patterned nature of speech (Birdwhistell 1970, Schechner 2003);
- to explore "co-presence" and "interaction rituals" (Goffman 1968).

Figure 16 – "Breathe and connect" (2014)
Coordinating breathing patterns and developing a sense of co-presence

Figure 17 – "The presentation of self" (2014)
"I'M NOBODY, WHO ARE YOU? Are you nobody too?" [13]
Silent replay: posture, gesture and facial expressions only

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[13] Opening lines of a poem by Emily Dickinson (1830-1886): "I'm nobody. Who are you? Are you nobody too? Then there's a pair of us. Don't tell, they'd banish us you know!"

Prior to attending the workshops, students are normally asked to make their own selection from the video corpus. They choose "micro-scenes" or "word-gesture capsules" which will later be *re-enacted* during the group sessions. The gesture sequences provide primary movement material for the choreographic variations on form, energy, orientation, placement, mood and intent that are later developed. Dance theory (Laban 1962) and simple dance composition techniques (Ashley 2005, Burrows 2010) are applied to work on the *form*, *dynamics* and *expressive impact* of bodily moves. Combined with simple drama techniques (Lecoq 1999, Adler 2000), this instructional method allows students to achieve an unusually high degree of mental and physical engagement in the observation and interpretation process. Even shy and self-conscious students eventually find themselves "emboldened by embodiment" (Lindgren & Johnson-Glenberg 2013: 445).

Figure 18 – "Laughing in the face of adversity" (2014)
Free variations based on an authentic vocal-gestural sequence[14]

We now come to the experiment proper, which took place during the first "choreography of speech" workshop to be held in Spring Semester 2013. The participants convened at the University Performing Arts Centre, located on the main campus site. Instruction about movement was provided by Jean Magnard, a professional dancer and choreographer,

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[14] The primary gesture form was taken from a public address by the Australian comedian Jean Kittson (2008): "Is it a call to let the good times roll and LAUGH IN THE FACE OF ADVERSITY? Or is it a cheery call, to look beyond the temporary inconvenience of a global panic, to the good times ahead?"

who led the group into physical action. He had been previously briefed on formal issues related to the morphology, semantics and semiotics of gesture. The sequence dedicated to the symbolic properties of the globe gesture lasted approximately 20 minutes.

Figure 19 – "Shaping ideas with the globe gesture" (2013)
Demonstration of the basic gestural form to participants
Choreographer (on the left) uses typical Eng. and Fr. examples

None of the 14 students knew they were taking part in an experiment on the heuristic properties of gesture. The general working hypotheses were concealed from them: that gesture symbolism is symbolism in action, both concrete and abstract, mental and physical (McNeill 2005); that the meaningful connections established between "hand and mind" (McNeill 1992) may be brought to consciousness and used as facilitators in the process of understanding, learning and memorizing; in short, that gestures (especially hand movements) "help us think" (Goldin-Meadow 2003).

The globe gesture was first presented through authentic English and French examples, and characterized as a type of gesture typically used to "shape ideas", while conveying "a sense centrality, wholeness and unity".

Figure 20 – Original English example
"I think this week we started to get A SENSE OF ALL THE SCENES[15]…"

Meaningful connections were thus established between *physical action* and *symbolic activity*. The semiotic processes of *entification* and *gestural reification* were instantly brought into full awareness. Every time the globe move was made, the abstract entity was presented as "a bounded supportable object" (McNeill 1992: 148), "a mass of some kind, a concrete substance" (152). The students did not simply watch or listen: they *engaged* in what Forsythe (2013) aptly calls "choreographic thinking". They consciously adopted a "physical model of thought", in which the "choreographic enactment" of word-*formation* and meaning-*making* "materialized in a chain of bodily action" (Forsythe 2013). The English suffixes *–hood, -ship* and *–ness* were first used to work on the morphological process of nominalization and its cognitive corollary: substantivation through conceptual reification. Nominal, adjectival or grammatical bases like *child*, *dark* or *if* were metaphorically "thrown" to the participants who "caught" them and used the globe gesture to "form" a noun and "give substance" to its meaning, as nominalizing suffixes were added: *childhood, darkness, ifness.*

-    (N) human > quality, condition or position: e.g. *brother > **brotherhood** ; knight > **knighthood**; fellow > **fellowship** ; owner > **ownership…***

-    (ADJ.) (N) (GRAM) > state, quality or property of being; philosophical concepts: e.g. *good >*

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[15] Akram Khan, British choreographer, being interviewed during rehearsals of *Vertical Road* at Curve (Leicester) in 2010.

*goodness ; tough > **toughness** ; other > **otherness**; together > **togetherness**; that> **thatness;** is > **isness***…

The derived nouns instantly acquired a remarkable degree of "palpability" (Talmy 2000: 144) and their meanings were given shape, texture and substance. Once this was done, the globes "dissolved", as the arms went back to their rest position. Alternatively, the globes were maintained and used as "play material". When this happened, the entities became *choreographic objects* in their own right, undergoing a series of physical manipulations, with manual activity standing for mental activity, and choreographic objects for objects of conception.

Figure 21 – Metaphor in action: manipulating objects of conception (2013)

A number of choreographic variations were developed. The standard shape of the globe gesture was treated as pure movement pattern. Its formal properties were explored, its expressive potential was investigated and pushed to the very limit (Fig. 20 below). Participants were asked to make the globes "bigger" or "smaller," higher up or lower down, closer or more distant. The gesture was also performed lying flat on the stomach or on the back, creeping or rolling on the floor; striding, skipping or making small leaps; unstressed or with marked emphasis; regular or enhanced.

Figure 22 – Variations in space (2013)

Finally, participants were guided into creating personal analogies between the shape, size or dynamics given to their dramatic interpretation of the globe gesture and their inner representation of a concept: how they "grasped" it (mentally), how they "experienced" it (emotionally), how they "stood" in relation to it (socially). But contrary to expectation, the "choreographic enactment" of the concepts (Forsythe 2009) resulted in participants altogether forsaking the globe gesture, rather than developing variants of it. Indeed, the video footage reveals that as soon as emotional or attitudinal dimensions were introduced, all 14 students (and the choreographer himself) resorted to the following expressive strategies:

Strategy 1: using brisk hand movements, marked facial expressions and clear postural shifts to express strong contrasts in attitude: "likes" vs. "dislikes", "attraction" vs. "revulsion", "elation" vs. "depression", "trust" vs. "fear", etc. The priority given to the expression of personal attitudes to something rather than the "thing" itself was a clear indication:

- that when a concept is symbolically or emotionally loaded, the semiotic expression of feelings overrides the semiotic representation of conceptual content. For instance, *darkness* is culturally and experientially associated with "fear" and "confusion", and speakers feel more inclined to express such feelings rather than the notion of *darkness* itself.
- that feelings are not just "feelings" but *emotional stances*. What we "feel" is very much a matter of

how we *stand* in relation to some idea, event, person or thing.

-   that we don't simply *have* feelings, we *experience* them physically and *act them out* socially with our whole bodies.

Strategy 2: resorting to some form of mimicry. Iconic depictions are produced that abstract away then display salient features of the referent. Thus, all participants responded to the verbal stimuli *toughness*, *sadness* with a variety of frowning and drooping postures, not with hard or limp variants of the globe gesture. Interestingly, the physical enactments of word meanings involved the entire body, not just the hands, unless some emblem was available, as happened when *madness* was uttered, and translated by short repeated knocks on the head.

Figure 23 – *Sadness* (2013)
Heads down and drooping posture
Globe gesture is unanimously discarded

The experiment thus revealed that the conscious, calculated use of abstract gesticulation with a strong metaphoric component helps learners develop embodied forms of understanding, but up to a point. The general *ideational* and *presentational* properties of the globe gesture (already described in 1.) are well suited to the exploration of general morphological rules and conceptualizing processes: how nouns may be formed and notional entities created through affixation; how meanings may be converted into substances and thought into manipulatory activity through metaphor (Lakoff & Johnson 1980, 1999). Gestures do indeed "exhibit mental images" (McNeill 1992: 12) that may be used strategically to present and discuss abstract notions or

processes during a research seminar, should a "kineflective" approach be adopted. As "thoughts are rendered visible" (12), as kinetic imagery is displayed that is "simultaneously concrete and abstract" (McNeill 1992: 179), as space and movement become "imbued with abstract content" (179), *bodily action* symbolically and metaphorically aligns with *mental action*. This is possible only because "giving manual shape to abstract concepts" (Streeck 2009:165) is part of normal *semiotic behavior*. As direct observation immediately showed and a survey later confirmed, participants had no difficulty giving sensory reality to nouns and substance to meaning by using variants of the globe gesture. None found it "strange", "stupid" or "inhibiting" to manipulate abstractions physically. Neither was any resistance shown when students were told to "form", "shape" or "handle" ideas manually. The gestural metaphor made perfect sense, so long as "symbolic action" (Kendon 2004) or "conceptual action" (Streeck 2009: 151) remained at a general level of abstraction, using verbal stimuli like *concept, idea*, *thing*, *stuff, entity* or *meaning*. Choreographic variations on the form, quality, orientation, and dynamics of the globe gesture were equally successful, so long as they were performed in a vacuum: (making the globe) "bigger", "smaller", "higher", "lower", "compressed", "expanded", (performing the move) "lying down on one's back", "stretching forward", "reaching out to someone." Interestingly, the choreographer was often found using the words *idea* and *concept* as a verbal stimulus to develop choreographic variations: e.g. (Eng.) *a big / small / huge / towering idea*; (Fr.) *un concept minuscule / énorme / gigantesque*!

Elsewhere, participants were caught in by the semantics of the nouns and switched to a different mode of choreographic enactment. They spontaneously gave up the "manual thinking method" with its "concept manufacture" scenario (Streeck 2009), and went on to "manifest" (Schechner 2003) individual meanings or emotional impact. The relatively fixed and neutral shape of the globe gesture was felt to be "dull", "characterless", "dispassionate", or too "general" and "constraining" to enact powerful

ideas, as participants admitted the following week, upon screening the video[16]. The rejection was deep-felt and unanimous. All students agreed that the experiment had been too narrowly focused on a single gesture type: the same pattern was used over and again *ad nauseam*. A female participant insightfully remarked that "the protocol was somewhat flawed from the start because the globe gesture was stripped of its original communicative properties" and "removed from naturalistic context." However, the experiment did succeed in showing how the "intelligent body" could engage in conscious acts of "gestural conceptualization" (Streeck 2009). Abstract deictic and metaphoric gesticulation was willingly and successfully used to give "concrete, enactive visual form" (167) to abstract concepts and processes (e.g. nominalization, conceptual reification). Participants were seen "thinking by hand" (151) and consciously "relying on their bodies to provide conceptual structure" (152). The gestural action they engaged in was a form of conceptual action. Whatever kinesthetic strategy was adopted, all participants combined symbolic and choreographic enactment to create and display word meanings. Simple visual symbolism, based on "schematic imagery" (162), was effective in allowing ideas to *take shape* yet remain *invisible*, and to acquire a certain degree of *palpability* while remaining thoroughly immaterial. All things considered, the experiment showed that the resources of "gestural conceptualization" (162) - which are too often left untapped - could be put to efficient use in academic settings, that "embodied, enactive forms (could be) created to organize and represent content" (162), that gesture does not simply accompany or "mediate" thought but "*is* thought" (174), as both the *flow of movement* and the *flow of thinking* integrate into a single process of understanding.

4 Concluding remarks

The manual creation and display of nominals validates Lakoff and Johnson's early claim that "ontological metaphors" (1980) are a crucial component of human cognition, and further substantiate Langacker's theory of "conceptual reification" (2000, 2008). More significantly, the gestural reification and display of concepts (McNeill 1992, Calbris 2011, Lapaire 2014) is a sure indicator of the physicality and performativity of speech (Schechner 2003). Language is primarily designed to be played out on the social stage and its semiotic structure reflects this. Gestural action, postural shifts, facial expressions, intonation patterns should be viewed as inbuilt co-articulators of spoken forms, not paralinguistic "extras" or communicative "add-ons." Complex "kinemorphic constructions," in which "body motion," "stance" and "vocalic behavior" appear to be "intimately and systematically interdependent," are the true units of spoken language (Birdwhistell 1970: 108-109). The entire semiotic material of spoken language is thus embodied and orally realized through symbolic action (Kendon 2004, Streeck 2009). As speakers physically engage in the public performance and transmission of experience, they resort to dramatic forms of expression, especially when dealing with abstractions. The globe gesture is one among many spectacular forms of conceptualization, both abstract and concrete (McNeill 2005, Goldin Meadow 2014), which allow "concepts to take shape" (Arnheim 1969). As "gestures of the abstract" (McNeill 1992) are produced, rational ontological boundaries dissolve: speakers pretend to model and manipulate invisible "things" that addressees pretend to watch but will never see. All agree to play a game of semiotic make-believe, where the perceptual and ontological boundaries separating the visible from the invisible, the physical from nonphysical are abolished, where shapeless concepts presented as "real" and "substantive," yet allowed to float and dissolve into gesture space.

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[16] Upon completing the workshop session, participants were taken to a computer room and asked to fill out an online questionnaire. The following week, the group shown the video of the experiment and asked to reflect upon their own individual gestural behavior as well as the general "kineflective" process.

Appendix 1

Post-experiment questionnaire: summary of results

The 14 participants were asked to characterize the *choreographic experience* (moving about, performing the exercises creatively) and the *teaching/learning process* (understanding the morphology and cognitive semantics of nominalization). Although 5 confessed feeling "tense", "inhibited", "apprehensive", "ill at ease" or "self-conscious" in the first moments, all admitted that they "warmed up within minutes" and "had no difficulty following the instructions". Eventually, 12 (out of 14) rated the choreographic experience positively at levels 4 or 5 (on a scale of 1-5), with corresponding degrees of "physical engagement".

When asked to "think of three words describing their overall reception of this embodied and dynamic teaching format" participants produced terms related to the following semantic categories: *novelty* (e.g. "new", "innovative", "surprising", "disturbing at first", "off the beaten track", "unusual") [40 %]; *intensity* (e.g. "engaging", "motivating", "stimulating") [20 %]; *creativity* ("creative", "inspiring") [20%]; *freedom* ("bold", "liberating", "light") [10%], and *relaxation* ("relaxing", "soothing", "peaceful", "joyful", "pleasurable") [10%].

Their perception of the gains made through choreographic thinking was a "better understanding" of the "co-expressiveness of speech and gesture" (14), "thinking by hand" (14), "gestures of the abstract" (14), "conceptual reification" (12), "nouns as substantives" (12); the "conceptual use of space" (10), "symbolic action" (8). Gestural action was not deemed essential to gain a better understanding of "word formation" (4), "nominalization" (4), "metaphorical mapping" (2).

Appendix 2

Transcript of William Forsythe's interview, recorded at The Ohio State University in 2009 (6'04).

Brackets indicate that the speaker's voice can be heard but that he does not himself appear on screen. The present study only analyzes video material showing Forsythe as he faces the camera (5'48).

(This website is a choreographic object). It's not the body you know. Normally, all the information about the choreography is embedded in the body. The body is the choreography. And, so I was thinking, how could you get information about choreography out there, without having a body? Hmm. And this eh is one of the examples of how you could do that. I've done installations before where you don't need a person to transmit the idea. There's some other situation that guides people into action. And this is some slightly different… in so far as the idea of choreography itself as opposed to (a) choreographic instruction or imperative are… the ideas are made visible. So it's an object that… or I would say it's an object of choreographic knowledge. Up till now… hmm… other practices have had other objects. There's books that contain facts, literature itself. Eh films. There is DVD's, film itself, there's… Hmm… Even furniture itself is full of ideas. So the world is full of objects. Only dance had no objects to remind people of its investigations or what it's been through or what it does. And so I realize that this is a problem in the marginalization of dance culture, which has tremendous economic impact upon the practice. Eh I feel that part of it was due to the fact that we had no objects to represent that which we know. You know, we do know a lot. But we know about eh organization, timing, pattern emergence… all these different things… architecture… but how do you express this outside of the dance itself? So that people can read again as they watch the dance. Well, now we have a way of basically holding time a little bit more still, you know. We can actually slow is up or speed it down any way we like and say "watch", yeah, see what we know. And we also have the opportunity to say what else

Signo [ISSN 1982-2014]. Santa Cruz do Sul, v. 41, n. 70, p. 29-44, jan./jun. 2016.

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does this knowledge look like? OK? So we're working with a team of people who can look at our structures. Turn it… transform it into another language, you know, into a data point set and say OK with this aspect of the structure I can create something else that speaks actually choreographically. But choreography does not always look like a dance. And that's kind of interesting. Choreographies or even dances don't always have to be danced. Sounds counter intuitive but it's the truth. It's because they're composed of information and seeing these phenomena as information is… is a revolution. Because you realize that they contain worlds of possibility. (Choreography is always about translating). Going from one state to the other, and … from idea to thing, yeah… or from idea to action. So it's the force of an idea that pulls people into action. And what's very very interesting for me in this project, which I didn't expect to be interesting, was how significant data could be. And by data I mean the dance, the properties of the dance that has been analyzed by your team here obviously, and turned into numbers, and turned back again, translated into another visual form. And certain things opened up which I really didn't expect to see and suddenly yesterday in one of the graphs I saw a model of responsibility (and I saw that the people I work with, that I know exactly how much they like to have responsibility… it was a really) a clear depiction of their personalities… and I thought that that was very moving… that something could be turned a certain way and that suddenly personality traits would emerge. And that really surprised me. There are probably innumerable approaches to choreography… and eh… and it would be great (if we could eh start a kind of library… this is the way I see this is that) up till now there's been no library, not even an encyclopedia, so to speak, of concepts and of the knowledge embedded in dancing that is… how do you say… that can be read at the same time as the work explains itself with this annotation so to speak and, hmm, so now, we could actually finally start this project which is, if not a library there or an encyclopedia of sorts of dance related choreographic

concepts, and with the demonstrations which should in my mind transpire at the same time as the demonstrations that transpire at the same time as the explanation, because the dance is the explanation, but (he have the ability now to pull out properties visually and isolate them and they can be looked at again and again, they can be scrutinized at leisure, which they couldn't before).

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