2   # A Conceptual Framework for Studying Evolutionary Origins of Life-genres

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13   ## Abstract

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15   In the first part it is asked whether there might exist an evolutionary bridge from possible genres in nature to
16   human cultural genres. The crucial sub-hypothesis is that basic life-conditions, partly common for animals and
17   humans, in the long run can generate life-genres. To investigate the hypotheses a framework of interrelated key
18   concepts on four possible levels is outlined in the second part. Signs are seen as elements in utterances.
19   Utterances can be perceived as genres, simplified to kinds of kinds (etc.). Genres are in turn briefly discussed in
20   relation to neighbouring concepts and the concept lifeworld. Utterances and genres are seen as products and
21   processes and are claimed to have five reciprocal aspects: form, content, act, time, and space, the necessary basic
22   elements to initiate and establish communication. The fourth part exemplifies how a chimpanzee's 'begging' for
23   meat, a fish's nest-making, and kinds of birdsongs, could be seen as utterances and life-genres. The last part
24   gives a brief summary, lists pin-pointed challenges, and reflects over the framework's possible value and
25   relevance for biosemiotics.

26

27   ## 1. Introduction

28   ### 1.1. Preliminary on Genre and Life-genre

29   The article contains the first part of a project studying possible evolutionary origins of genres. Genres in this
30   context means kinds of communication in any mode developed over time, a socially shared form of macro
31   communication. This conception implies that genres no longer are seen as just literary, textual, or verbal, but as
32   over-arching, (bio-)cultural, and semiotic phenomena (Martin 1997). Within the title, *A Conceptual Framework*
33   *for studying Evolutionary Origins of Life-genres*, rest the assumption that human capacity to handle complex
34   forms of communication, such as genres, existed before the dawn of verbal language. Further, the title implies
35   that what has been termed life-genres (Voloshinov 1973), is a possible link or bridge to this past. Luckmann's
36   broad description of genres can work as a preliminary delineation of life-genres: The repertoire "[…] of
37   communicative genres constitutes the "hard core" of communicative dimensions of social life" (Luckmann 1992:
38   228-229). And also: "[…] genres are a universal element in human communication and a part of communicative
39   practice in all human societies" (Luckmann 2009: 267).
40   This perception serves as a stepping-stone for the hypothesis that humans and at least some animals
41   may share some basic life-genres, that there might exist an evolutionary line between such genres in nature and
42   genres in culture. To exemplify possible life-genres: Naguib and Riebel (2014: 235) points to four functions
43   birdsong can have, territory defence, mate attraction, mate stimulation, and pairbond maintenance. Such forms of
44   communication may generate life-genres. The empirical investigations of genre-like patterns, and especially life-
45   genres, in the project's next phase, will prioritise studies of so-called higher order animals, especially
46   vertebrates, mammals, and primates, since they make up, in that order, stages on human beings' evolutionary
47   line. The project is a study of other researchers' studies, a meta-study. This is not to say that life-genres cannot

48 have earlier roots. It is partly a practical reduction of fields to investigate. Also, it is not unlikely that vertebrates
49 have developed a mind that resembles human beings' capacity to handle higher order communication

50 **1.2. The Article's Epistemology**

51 In fields such as ethology and biosemiotics searching common communicational ground between animals and
52 humans, is commonplace (Håkansson and Westander 2013; Stegmann 2013; Finnegan 2014; Witzany 2014;
53 Bradbury and Vehrencamp 2011). Yet, the life-genre hypothesis may seem far-fetched for researchers of signs.
54 The article is therefore designed to outline a conceptual and theoretical framework that can motivate the idea of a
55 possible common ground, even for the level of semiotic genres. It does so by investigating and problematising
56 utterance relative to sign, and genre relative to other macro concepts. The clarification of the two key concepts,
57 utterance and genre, shall help operationalising the hypothesis and in the next phase of the project to develop
58 methodological tools. Consequently, the article does not present claims to be proved empirically in the course of
59 the text. The last part though lists challenges the framework may face. Hence, the article's prime aim is to
60 generate a first theoretical basis. Its own genre is, so to speak, hypothesis.
61   Describing evolution is primarily a diachronic enterprise. However, to detect causal connections along a
62 timeline presupposes compatible, synchronic descriptions of relatively stable, and thus comparable categories.
63 Stages of development can be described "from matter to mind", but even the other way around, how mind
64 emerged from matter (Deacon 2013). Paleontological research, a long history of animal breeding, comparative
65 biological studies, and above all, genetic studies of DNA, have revealed a range of familiarities between
66 organisms. Actually, developmental lines form the basis for categorisations of all types of life. Speculative and
67 empiric research have been conducted to explain how Homo Sapiens developed from animal to a human being,
68 following traces from past to present or following evolutionary paths in the spirit of Darwin. Critical research on
69 patterns taken for granted to be particular human, and hence non-animalistic, is still rather scarce.
70   In this article the evolutionary direction is in some sense altered. It is not asked how human
71 communication came about in the past, but rather whether the highly abstract and advanced human capacity to
72 create and handle complex cultural communication, could have animalistic roots. The question implies a
73 reversed epistemology: With point of departure in what we at present know about humans' use and
74 understanding of communicational genres, how likely is it to find basic biological conditions for this ability in
75 the evolutionary past? The methodological grip is to allow studies of today's animals to represent animals of the
76 past that humans are biologically related to, with advantages and pitfalls such a grip may imply. To answer the
77 question can nevertheless benefit from research on how human communication came about, a field in which it is
78 hard to find adequate empirical data (Tomasello 2008 and 2014). Further, there are relevant theoretical and
79 critical discussions on the question whether there is a line from animal communication to human
80 communication, such as Fitch (2010); Bar-On and Moore (2017); Scott-Phillips (2010).
81   To move epistemologically from presence to past in the fields of genre and communicational studies,
82 requires a clarification of other concepts, such as sign, utterance, and lifeworld. Not to apply more specific
83 linguistic concepts, such as sentence and language, implies an explicit move from a verbal oriented linguistics to
84 a general and social semiotics. The choice is motivated by the nature of biosemiotic studies, the field the
85 framework is applied on and excerpts data from. Relevant discussions are already initiated. In *Animal
86 Communication Theory* informationists and their critics discuss possible common ground(s) for the field
87 (Stegmann 2013). Emmeche and Kull (2011) clarify the field of biosemiotics as any life seen as "action of
88 signs". Contributions are of course also found in *Biosemiotics* and similar journals. Not to apply traditional
89 linguistic concepts does not imply that notions derived from language studies are invaluable. On the contrary,
90 some key concepts are rooted in text theories. However, along with a move from focusing text to investigating
91 multimodality and (bio-)cultures, some are redefined to be applied in semiotic approaches (Kress 2010).

92

93 2. Developing a Framework of Key Concepts

94 **2.1. Understanding Communication in Culture and Nature on Interrelated Levels**

95 To understand a phenomenon in depth it is often necessary to restrict it in at least three directions: downwards to
96 something smaller it may consist of and be dependent on, upwards to something larger or more extensive it may

97   be part of, and finally sideways to neighbouring, similar phenomena. Such a classifying, taxonomic grip implies
98   a conscious use of the concept of *level* as part of a system or a framework (Rafieian 2012). Regarding genre and
99   utterance as phenomena, one should inspect concepts on lower levels, such as sign and act, and on higher levels,
100   such as lifeworld, Lebenswelt, Umwelt, semiosphere, ecology, and context. Competing concepts could be code,
101   script, schema, play, habitus, register, discourse, and meme.
102   The concept level is epistemologically challenging, since, in a conceptual and disciplinary system,
103   levels are interdependent. For biosemiotics level is both necessary and problematic (Bruni and Georgi 2016). Its
104   necessity is rooted in the fact that researched objects in the field vary from the smallest to the most
105   comprehensive entities in nature and culture, as demonstrated in Deacon's opus magnum (Deacon 2013). For a
106   biologist the smallest may appear as more relevant since they serve as key building blocks in the disciplines'
107   epistemological enterprise. For a theorist studying communication or philosophy more comprehensive
108   phenomena, such as mind and meaning, the macro concept genre may be just as important, although their
109   abstract nature makes them problematic to investigate empirically. To do research between such extremes
110   requires a clarification, not unlike differentiation of explanation levels in physics. While there is a hope in
111   physics to unite them all in one grand theory, it could be a major mistake to import such an idea into cultural and
112   communicational theory. The framework anticipates four interrelated levels, here termed sign, utterance, genre,
113   and lifeworld. Dynamics of utterance and genre are treated in depth, while sign-utterance relations and genre-
114   lifeworld relations are given less space.

2.2. From Dyadic Language Signs to Cronotopical Triadic Utterances

116   A premise for the partly diachronic way chapters 2 and 3 are written, is to show intellectual routes and
117   epistemological roots for the set of concepts that make up framework, form, content, act, time, and space, the
118   five constituents of both utterance and hence genre.
119   The meaning of "from […] signs to […] utterances" above is double. It foreshadows a description that
120   will see signs as elements in utterances. Besides, it suggests that researching animal communication in a general
121   semiotic perspective may benefit from moving focus from signs to utterances, as it may work as an intermediate
122   level studying higher order communication such as genres and life-genres. This move does not imply 'away'. In
123   biosemiotics utterances may well be studied as signs. Through history many sign theories have been developed
124   (Nöth 1990). Priority here is given to Saussure, Peirce, and Bühler. The two latter represent a move from a more
125   static language-based semiotics to a dynamic and general semiotics. Saussure's influential language sign is
126   basically dyadic, given its binary split between signifier and signified (Saussure 1916). When popularised, these
127   two elements are often seen as form and content respectively, which by the same token paves the way for seeing
128   language studies mainly as a combined syntax-semantics enterprise.
129   While Saussure defined the sign as stable, Peirce rather saw it as dynamic, giving place for semiosis, the
130   never-ending interplay between aspects, the trichotomy of sign, object, and interpretant (Peirce 1998: 291). Thus,
131   if Saussure is the Linné of linguistics and semiotics, Peirce is Darwin. Hence synchrony, may seem to oppose
132   diachrony and vice versa. Habermas, advocating a pragmatic view on language and communication, refutes a
133   dyadic (Saussurean) sign, but confronted with a choice of two different triadic views, gives Bühler (1934)
134   primacy over Peirce, which implies a non-essentialist, synchronic view of language and communication
135   (Habermas 1998). Historically Bühler (1934) represented a pragmatic move compared to Saussure, insisting that
136   along with symptom and symbol, signal should be seen as an inevitable third part of language sign functions.
137   Integrating reciprocally these three functions, or in my term, aspects, implies a paradigmatic shift from a
138   closed Saussurean linguistic sign to an open utterance, as well as a semiotic integration of syntax, semantics, and
139   pragmatics (Morris 1938). According to Bakhtin (1986) an utterance is by definition partly open, since its
140   meaning depends on genres, arguing that utterances and genres are in never-ending dialogues. No utterance, no
141   genre, and vice versa. Semioticians may ask why Bakhtin's utterance is given priority over Peirce's sign. A
142   pedagogical reason is that utterance may be easier to understand for pupils, students, and laymen. Another is that
143   Peirce actually used "utterer" and "interpreter" for communicators (Peirce 1998: 403). When utterers utter, a
144   result is utterances. Although utterance has been associated with (verbal) language, an etymological root in old
145   Germanic languages for utter, is simply out. Utterance is in its basic form something being expressed, coming
146   out (Wiktionary 2019). Thirdly, it is perhaps more easily applied in semiotics compared to many other micro
147   communication concepts. Finally, and most important, it seems necessary to establish a communicational level

148 above the sign to better explain genre as phenomenon. This is what Bakhtin outlines in detail in *The Problem of*
149 *Speech Genres* (Bakhtin 1986: 60-102). Ongstad (2004) analyses this chapter in detail investigating which key
150 elements that seem to make up a Bakhtinian utterance, and how utterance relates to genre.
151   The search for a missing pragmatic link among theorists has produced a row of terms for a possible
152 third factor. Bakhtin (1986) insisted on addressivity, Halliday (1978, 1994) preferred interpersonal, and Searle
153 (1971) illocutionary. Wittgenstein (1958) simply called it use but did not offer an integrated triadic view.
154 Habermas follows Bühler, rather than Searle, stressing the paradoxical principle of *simultaneity* of aspects in
155 speech act theory, when a *speaker* comes to an understanding with *another person* about *something* (Habermas
156 1998: 73-76/Habermas' own italics). Habermas is critical to Peirce's concept interpretant. He argues that it is
157 seen as a mental rather than as an intersubjective, societal aspect of sign processes (Habermas 1998: 92). In
158 Habermas' view communicative action connects simultaneously something in the subjective, in the objective,
159 and in the social worlds (Habermas 1981: 120). Valid descriptions of communication seem in any case
160 dependent on triadic complementarities of syntax, semantics, and pragmatics. Peirce's semiotics is of course
161 pragmatic, but what Habermas searches, but not finds, in his reading of Peirce, is a sign concept that more easily
162 can connect lower and higher levels of communication, of micro and macro, of the inner world and society.
163 Notwithstanding, Habermas pay no interest in including genres in his communicational theory (Freadman 2009;
164 Sandler 2007). Besides, by refuting Peirce's principle of semiosis, where the interpretant plays a crucial role,
165 Habermas ends up with a synchronic description of communication, one that hardly can explain change
166 diachronically (Ongstad 2009).
167   An implicit, almost paradigmatic consequence of applying a principle of simultaneity on reciprocal
168 triadic relationships such as between syntax, semantics, and pragmatics, is that aspects taken as a whole, should
169 be seen as paradoxical. Meaning confronts interpreters with the paradox of interpretation (Grice 1991).
170 Methodologically aspects cannot be handled, neither as researchable parts nor as an integrated whole without
171 breaking more traditional, academic norms for validation. Trying to omit the paradox of simultaneity may create
172 perceptional reductionisms and disciplinary blindness delivered from a more restricted perspective, say of
173 syntax, of semantics, of pragmatics, or of psychology, of science and of sociology, etc. (Ongstad 2014). There
174 are no easy ways out of this trilemma or trichotomy.
175   Some theorists prioritise pragmatics, such as Wittgenstein, Halliday, and Habermas, and give the
176 concept primacy by stressing the importance of use, act, action, and function in communication. Pragmatic
177 priority also occurs in studies of animal communication. See Scott-Phillips and Kirby (2013) and Witzany
178 (2014) for a discussion. However, giving pragmatics the upper hand could be a hasty conclusion. As will be
179 clear, the framework is closer to Roman Jakobson (1935). He claimed that, depending on the kind of
180 communication in question, interpreters should search for a dynamic dominant function since the importance of
181 various aspects may shift during the process uttering.
182
183 **2.3. What Constitutes an Utterance – and Thus 'Communication'?**

184 Different kind of triads in sign theories are described by Nöth (1990: 90). Most important is Peirce's, a sign
185 theory that by definition is triadic and pragmatic. The nature of Peircean semiotics is logically and
186 epistemologically somewhat different from the one applied in this project, although both are triadic'. The key
187 concept for explaining change in a diachronic perspective in Peircean sign theory, is semiosis. The framework
188 explains change by means the concepts given and new. Although a comparison may have some relevance, a
189 thorough discussion will too much space. Kattenbelt (1994) has analysed the triad of emotion, action, and
190 reflection in the light of Peirce, Habermas, and Seel. Francescoli (2017: 463-466) has discussed different triads
191 in biosemiotics. Historic versions of conceptual triads are manifold, for instance:
192

Form	Content	Act	Theorist
Beauty	truth	goodness	(Platon)
Pathos	logos	ethos	(Aristotle)
Aesthetics	epistemology	ethics	(Kant)
Heart	head	hand	(Pestalozzi)
Symptom	symbol	signal	(Bühler 1934)
Syntax	semantics	pragmatics	(Morris 1938)
Expressivity	referentiality	addressivity	(Bakhtin 1986)
Textual	ideational	interpersonal	(Halliday 1978)
Speaker	something	another person	(Habermas 1986)
Inner nature	outer nature	society	(Habermas 1986)

193
194   Figure 1. Triads in philosophy, education, semiotics, linguistics, and communication theory.
195

196   An integrated triadic view is found, among others, in Bühler's, Bakhtin's, Halliday's, and Habermas'
197   works. Based on a simplification of their different triads, the aspects structured form, content referred to, and
198   addressed acts, can be seen as cornerstones in semiotic utterances. However, these three aspects need to be
199   combined with a contextual chronotope, consisting of integrated aspects of time and space/place (Agnus 2012;
200   Bakhtin 1981; Magnus 2011; Watson 2014). The set of signs by which lifeforms of organisms position
201   themselves vis-à-vis the world and others, can be seen as utterances. Or, as Witzany (2014: 15) puts it:
202   "Throughout all kingdoms of life we do not find any coordination and organization that does not depend on
203   communication." This broader view of communication implies in principle that an organism cannot not utter,
204   since it is constantly, in a sense, doomed to relate itself communicatively to the outer world and to other agents.
205   Utterances can be said to consist of the utterer's form that expresses some kind of content and works as an act in
206   contextual time and space.
207   The point is not to search for as many communication triads as possible, but to make aware the
208   existence of two forces 1) the strong internal bounding between the three key elements (read horizontally), and
209   2) that uttering as a phenomenon, establishes a connection between concepts for each of its main aspects (read
210   vertically). It exists a line between all the first, all the second, and all the third notions in the mentioned triads.
211   Extending the perspective from studies of human communication and culture to semiotic study of creatures, the
212   three plus two crucial aspects for communication could be described as follows:

| Form-aspects:	Content aspects:	Acting/use aspects:	Time aspects:	Place/space aspects:
All physical structures and divisions of substance which have been used and can be used for communication on all levels on/in all possible levels and media and for all different ways of percepting for living organisms	What could be referred to in nature or culture by means of structure which have been used/can be used for communication on all levels on/in all possible levels and media and for all different ways of percepting for living organisms	All patterns of utterances that could be seen as process in nature or culture which have been used/can be used for communication on all levels on/in all possible levels and media and for all different ways of percepting for living organisms	All ways of dividing and relating time which have been used/can be used for communication on all levels on/in all possible levels and media and for all different ways of percepting for living organisms	All ways of understanding locality and space which have been used/can be used for communication on all levels on/in all possible levels and media and for all different ways of percepting for living organisms

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214   Figure 2. Five basic aspects constituting utterance as communication.

215   By presenting aspects side by side, as above, one risks treating them as separate categories, which they in one
216   sense are, or have to be seen as, in order to be empirically researched (Macrae and Bodenhausen 2000). In an
217   analytical perspective an aspect should be separable from a non-influential context. Nevertheless, they need to be
218   related too, since each of them have reduced significance as categories in a sign-systems (Nöth 1990: 198). They

219   are dynamic aspects in a relational system and demand systemic thinking (Flood 2010: 282). Analysing
220   utterances creates a classical methodological or philosophical paradox, the hermeneutic circle of parts and
221   wholes (Laverty 2003: 24). Admittedly, the systemic nature of utterances in context may complicate
222   operationalisation of researchable elements in empirical data. Some challenges are touched upon in the
223   exemplifying part and briefly outlined in the end.
224   A simple pentagon can thus serve as a first visual model for metaphorizing a simultaneous reciprocity
225   between the utterance's five aspects, which in turn constitute uttering as communication. All five aspects are
226   necessary. They relate to and define each other systemically.

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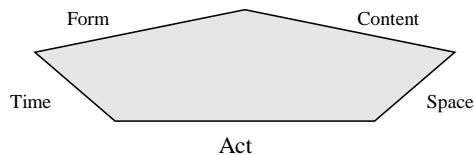
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229   Figure 3. The reciprocal relationship between the five basic aspects in utterances

230   An utterance for Bakhtin has more or less well marked beginnings and ends (Bakhtin 1986: 70). It is not
231   always given where it starts or ends, since there may exist threads to the past or tacit invitations to a future
232   continuation. In-between initialisation and finalising three inter-twined shifting processes are at work,
233   expressing, referring, and addressing. The triad can serve as preliminary delimitation and description of
234   utterances as a phenomenon. Bakhtin undoubtedly had literature in mind when theorising the utterance, but to
235   utter was even seen as a translinguistic or semiotics act (Bakhtin 1986: xv). To conclude, a Bakhtinian utterance
236   can be seen as a semiotic, not just a textual phenomenon, and be applied in analyses of communication in
237   general.

238   **2.4. Genres – from Closed, Static, and Textual, to Open, Dynamic, and Semiotic**

239   Anne Freadman, who has worked with genre theory and Peircean semiotics, claims that any semiotic theory of
240   interpretation requires to mobilise both sign and genre. A sign is inadequate without an accompanying postulate
241   of genre (Freadman 2004: xxxviii). Yet, genre seems notoriously difficult to define, and a few definitions, if any,
242   have general accept. Since definitions in most encyclopedia have not kept up with new developments, a brief
243   history is outlined in the following.
244   From the 1950'ies onwards pragmatists, such as Austin, Searle, Bakhtin, Wittgenstein, Habermas, and
245   Halliday, contested a Saussurean model of 'language'. Pragmatic perspectives became gradually common in
246   genre studies, such as in Neale (1980) and Miller (1984). Dubrow (1982), Hauptmeier (1987), Swales (1990),
247   Ongstad (1997), and Paltridge (1997) found that perceptions of genre had moved from rather closed towards
248   more open. From being seen as a fixed extrinsic category more theorists considered genres to be intrinsic, an
249   internal expectation. Hauptmeier (1987) claimed that seeing genre as social action had become more dominant.
250   The new focus was less on form and content, and more on use. Genres were social means to get things done, and
251   thus more of a functional and social phenomenon (Rosmarin 1985; Martin 1997). The functional view leads, in
252   some cases, to see genres as composed by three key aspects. To syntax and semantics, one simply added
253   pragmatics. Ben-Amos hence used the triadic set expressive, cognitive, and behavioral (Ben-Amos 1969) and
254   Miller form, substance, and acts (Miller 1984). A striking example is two of Rick Altman's publications on
255   (film-)genres, *A semantic/syntactic approach to film genre* (Altman 1984) and later *A*
256   *Semantic/Syntactic/Pragmatic Approach to Genre* (Altman 1999).
257   A new pattern in the 1980'ies was a move from a linguistic to a more (socio-)semiotic or multimodal
258   based orientation, such as Halliday (1978), Kent (1983 and 1985), and Kress (1993). Others, such as Freadman
259   (1987) and Threadgold (1989) claimed, with point of departure in a Bakhtinian view, that utterance and genre
260   operate dialogically (Voloshinov 1973; Medvedev 1985; Bakhtin 1986). Some functionalists, such as Halliday
261   and his followers, saw language and communication as triadic, not just on one level. They claimed that
262   functional diversification of language on the text-level consists of the aspects textual, interpersonal and
263   ideational, with a corresponding level of social contexting, with the three aspetcs mode, tenor, and field

264 respectively (Martin 1997: 5). It is explicit in their work that these key aspects are applicable even in other
265 modes than verbal language. In this respect the Hallidayian model is to a certain degree compatible both with
266 Bakhtinian genre theory and the framework.
267   In the new millennium, research on genre has become vast and hard to catch in its richness and variety.
268 Bawarshi and Reiff (2010: vii-viii) have tried to clarify main approaches in genre studies. They point to genre in
269 literary and linguistic traditions, genre analysis, genre studies, critical approaches to genre, genre in rhetorical
270 and sociological traditions, communicative and sociological orientations, rhetorical genre studies, studies of
271 genre systems, genre and distributed cognition, meta-studies of genres, and genre and activity systems. Besides,
272 many of these approaches can be further sub-divided into different schools and directions. Besides Ongstad
273 (1997) noted literary genres, film and television genres, video game genres, and music genres, research genres,
274 classroom genres, web genres, digital genres, media genres, and social genres. To conclude, genre can no longer
275 be seen as an exclusively verbal concept and phenomenon. If the notion genre is valid across all cultural fields, at
276 least one element should be common to all.

2.5. Searching Sideways - other Macro Concepts Relative to Genre

278 The paradigmatic shift that followed in the wake of pragmatics stimulated search for holistic or macro
279 conceptualizations of communication in general. They included among others, frame (Goffman 1974), code
280 (Bernstein 1990), communicative action (Habermas 1981), text (Barthes 1968), discourse (Foucault 1972),
281 habitus (Bourdieu 1989), register (Halliday 1978), script (Nelson 1986), and structure (Giddens 1984). A
282 thorough discussion of these, and other possible candidates is omitted here, mostly because the hypothesis
283 concerns primarily concerns (life-)genre. Most of them have been examined though. In Ongstad (1997)
284 relevance, adequacy, quality, and validity of key macro concepts in communicational and cultural theories,
285 including genres, were discussed critically in the light of eight criteria. A short version is found in Ongstad
286 (2007). It was asked, is the investigated concept: "1) understood as a process, 2) open for change, 3) related
287 explicitly to a micro concept, 4) explicitly triadic, that is, communicational, 5) embodied, 6) in work even
288 unconsciously, 7) part of a phenomenologically described system, and finally 8) semiotic?" (Ongstad 2007: 134).
289 Only some few genre theories passed the test. The criteria are quoted because each of them can serve as
290 elements, in somewhat altered order, of a preliminary description of genres as phenomena, as kinds of
291 communication that are embodied, implied, changeable, semiotic, and systemic, and in reciprocal processes with
292 triadic utterances.

2.6. Semiotic Genres as Sets of Kinds

294 Freadman (2012) makes a critical inspection of major genre theories. A main conclusion is that when genre has
295 been applied in so many new fields and professions, a temptation is to try to unite them under one umbrella. Her
296 warning against "grand theory" is relevant for my project with its ambitions to embrace many aspects of life.
297 Nevertheless, the general picture is that different fields still search different genre theories (Johns et al. 2006).
298 While an over-arching cross-disciplinary theory on the one hand is too wide, and a genre-concept applicable on
299 just one field on the other hand is too narrow, this project searches a position in-between, looking for a possible
300 single common pattern of different perceptions.
301   Many genre definitions do use such words as form of, ways of, sort of, type of, and especially kind of
302 etc. This is no coincidence since the English kind and the French genre share the common Latin root genus
303 (Neale 2005: 7). In the following I let kind represent them all. At first glance it might be tempting to perceive
304 kind as an objective, clearly limited category. However, it does not mean 'the same', but rather something
305 similar. Notions like kind and type implies an implicit comparison. There is a family resemblance, to use a
306 Wittgensteinian notion. Mental discrimination, using kinds, by balancing simultaneously similarities and
307 differences, can be seen as a fundamental process for living organisms in all aspects of life, from the highest to
308 the lowest level of life processes. Accordingly, when two similar phenomena are seen as sufficiently like without
309 being exactly the same, a mental kind is established. The logic of kind, and thus genre, is both/and rather than
310 either/or. Approximate similarities of kinds shared by a community are functional. Among genre theorists
311 Paltridge (1997) discusses definitions of genre-based Eleanor Rosch's concept prototype along similar lines.
312 Analyses of genres should accordingly not just follow traditional methodological procedures of categorisation
313 but be prepared for openness (Cohen and Lefebvre 2005).

314   Defining genres as (just) kinds admittedly seems simplistic at a first glance (MacLeod and Reydon
315   2013). However, kind can be differentiated into sub-kinds or kinds of kinds (Lowe 1997). In other words, genres
316   are clustered sets of differentiated and interrelated kinds. In some discourse communities genre users may share
317   the ability to discriminate between different complex sets of utterance aspects and between different sub-genres
318   and life-genres. Differentiation of kinds happens in relation to all five key aspects and their many sub-aspects
319   and countless combinations of sub-aspects. However, the project does not aim at mapping a specie's full set of
320   possible genres. It will search cases where key aspects of utterances seem to be recognised as kinds of
321   communication by vertebrates, mammals, or primates, and especially those indicating life-genres. A search for a
322   higher order mental resource, such as kind or genre, should not be too alien to researchers in ethology and
323   biosemiotics. For instance, Tomasello (2014) resonates strikingly similar investigating evolutionary traits for
324   human thinking:

325   "[…] the organism must represent its experiences as types, that is to say, in some generalized,
326   schematized, or abstract form. One plausible hypothesis is a kind of exemplar model in which the
327   individual in a sense "saves" the particular situations and components to which it has attended (…).
328   There is then generalization or abstraction across these in a process that we might call *schematization*
329   (…). We might think of the result of this process of schematization as cognitive models of various types
330   of situations and entities, for example, categories of objects, schemas of events, and models of
331   situations. Recognizing a situation or entity as a token of a known type – as an exemplar of a cognitive
332   category, schema, or model – enables novel inferences about the token appropriate to the type"
333   (Tomasello 2014: 12/author's italics).

334   Tomasello's last sentence leads to next point, how kinds are established and developed.

2.7. Utterances as Dialogical and Genres as Contextual – a Model

336   Within both Bakhtinian and Hallidayian genre perspectives, utterances and genres work *dialogically* with each
337   other to accumulate re-usable experience: Each time someone utters or perceives and interprets an utterance, a
338   communicational resource system is in principle both used and further developed (Voloshinov 1973; Bakhtin
339   1986; Martin 1997). This process applies for both utterer and interpreter, although not necessarily in identical
340   ways. Utterers use known or given elements. Communicating in new contexts and situations force utterers to use
341   new elements in combination with given ones. If understood and accepted by interpreters, a new pattern may
342   develop into a new kind of communication, a genre. Elements are reused over time and integrated in 'discursive
343   community' of users (Swales 1992). Communicators can thus enhance their communicational capacity. Genres,
344   life-genres, and whole genre systems are in this perspective a dynamic resource system, a potential for
345   communication (Halliday 1978).
346   In Oxford Scientific Films (2014) we witness a group of capuchins where an attractive alpha-male
347   seems reluctant to chase females. The footage shows how an eager female throw pebbles several times at him to
348   make aware of her interest. This behaviour is related to an 'inverted' role situation for this species, at least in the
349   particular environment. First one, later three females tried, in this particular way, to catch the male's attention.
350   According to Coelho (2015), pebble-throwing for this particular purpose has spread within the capuchin group
351   and has become a new social pattern that has lasted over time in this group. In Coelho's words the pattern
352   represents spreading of behavioural traditions across populations Coelho (2015: 7). In my words it exemplifies
353   how new may alter given as communication and create a possible new (life-)genre. Preparation for mating is a
354   common kind of life-genre in animal worlds. Throwing pebbles is a differentiated kind of kind of 'seduction' or
355   'flirt' for mating. Repeated utterances may be recognised as kinds and become genres. The genre helps uttering.
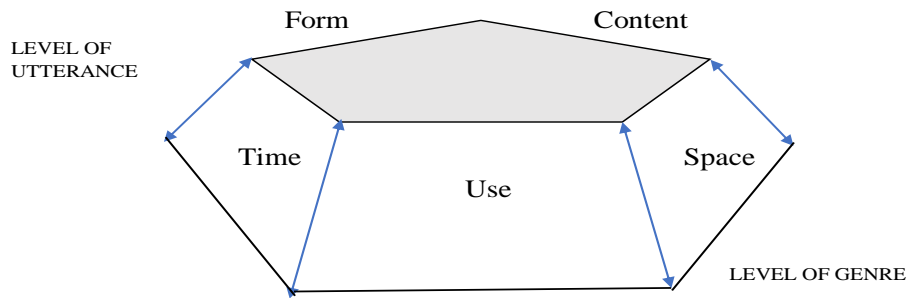356   Uttering stimulates genrification, the making of (new) genres (Frow 2015).

Figure 2. Utterance and genre modelled as a shortened/cut pentagonal pyramid with utterance as a concrete surface (a plane) in grey and genre as the underlying (abstract) rest of the pyramid in white/no colour). The pentagonal relationship between the five basic aspects applies for both levels. The blue-coloured double-headed arrows between the two planes symbolise the dynamic, dialogical relationship between the reciprocal use of utterance and genre. These processes work both in the moment of uttering/interpreting (seen synchronically) and over time and through development of the user (seen diachronically).

357

358 Both utterance and genres are defined by their five basic constituents. The model draws no lines between the
359 aspects, signalling that they work interrelated and simultaneously. Further, utterance is here seen as concrete, and
360 is in the model represented by the top level. Beneath is genre, symbolising that genre is unspoken, taken for
361 granted, and works an abstract inner resource in the process of uttering. By the same token new utterances in turn
362 add to genres' future capacity. Such interrelated processes are marked in Figure 3 with arrows pointing both
363 ways. Besides, utterances genres can be seen as partly situational, giving internalised premises in time and space.
364 Genres are hence (semi-)contextual. They establish contexts. Or, as Ken Hyland puts it in Johns et al (2006)
365 when asked about how genres work: "It is through […] recurrent use of conventionalized forms and
366 communicative practices that individuals develop relationships, establish communities, and get things done:
367 Genres therefore not only embed social realities but also construct them" (Johns et al 2006: 237).

368 **2.8. Genre Systems and the level of Lifeworld**

369 The model leaves out the problem of what genres may be part of. Some genre theorists have claimed that single
370 isolated genres cannot exist in isolation and that genres will occur in genres systems, that is, establishing a new
371 level (Prior 2009). Historically, there has been a search for a higher (or final) level, for a complex, systemic,
372 integrated whole. This interest is reflected symptomatically in notions and metaphors, for instance environment,
373 world, ecology, co-text, context, umwelt, and lifeworld. German philosophers and sociologists such as Schutz,
374 Luckmann, Heidegger, and Habermas have developed, in somewhat different directions though, Husserl's notion
375 of lifeworld (Germ. Lebenswelt) (Husserl 1936; Habermas 1986). The project uses the Habermasian outline of
376 the concept, a combination of three intertwined communicational aspects. Each person or species has, in any
377 situation, to relate itself (the individual) to a material world (nature) and to others (society) by communication. In
378 this sense lifeworld is perceived both as a communicational phenomenon and as a crucial way of perceiving, in
379 other words as both a sociological and as a phenomenological concept. Both Habermas' concept lifeworld and
380 Uexküll's concept umwelt (Uexküll 1921), are relevant when interpreting animal behaviour. However, I will
381 restrict investigation to single genres, being aware that they might be part of a species' more complex lifeworld,
382 a level that will have its own rationale.
383 To sum up and conclude on the issue of level: The lowest level is sign. Signs are seen as parts in
384 utterances, although some utterance may consist of only one sign. Further, utterances, when recognised as kinds
385 by users, will form a new level, genre. Genres may be mentally mapped together, forming a genre system with
386 kinds of kinds. In such systems life-genres may play a key role in creating a crucial part of the lifeworld, a
387 mental state in which utterances make sense or have meaning, as recognisable kinds of kind. The framework thus
388 has four levels, of which utterance and genre here are seen as most relevant. Both consist of the five interrelated
389 aspects, here termed form, content, act, time, and space. The project aims at studying other researchers'
390 descriptions and categories by means of the framework. Meta-analyses will therefore be confronted with a
391 variety of other conceptual frameworks and different perceptions of signs. I return to this issue in the last part.

392

393 3. Moving towards Application

3.1. Life-genres and Life Conditions. Discrimination and Differentiation of Kinds

One can suspect life-genres to be closely related to major life functions and basic patterns of behaviour that characterise a species. On the one hand primates, mammals, and perhaps animals in general, share some specific basic life conditions and life functions. On the other hand, will each species in addition probably have their own particular versions (or kinds) of different genres. There are cyclic routines that can contribute to the shaping of basic communicational patterns, such as daily activities - waking up, playing, working, hunting, moving, eating, drinking, preparing for sleep, grooming, self-caring, and fighting over rank. For instance, Weible (2011) examines the ethological notion of ritualization from the perspective of zoo-semiotic studies, and Ferreira (2014) studies typical cyclical behavioural patterns as routines. Seasonal routines might imply moving between habitats, hibernating, different kinds of feeding, and mating. There are life cycles or stages (if focusing mammals), such as the state as fetus, new-born, baby/'toddler', youngster, adult, mating, parenting, caretaking, old age. All these major aspects, and specific sub-aspects, are at play and may contribute to a relatively varied (communicative) genre system, or lifeworld(s) for each species.

In some cases, genres seem to be shared even across species. In a footage a polar bear near Churchill in Canada approaches sled dogs on a leash (BBC 2013). From a hut the dog's owner can observe and photograph a bear in hunting mode approaching. It targets the closest dog, seemingly planning an attack. The dog shows no fear, and, according to Stuart Brown, an expert on animal play, makes a "play-bow". The bear immediately picks up this 'invitation'(?) and starts 'dancing', and they 'play' for 20 minutes. This shift could be seen as a change of genre. Understanding the event from the level of lifeworld, the bear seemingly choose play over hunt. To study shifts between kinds of communication implies focus on animals' ability to discriminate between kinds of behaviour. For instance, how do young foxes understand when their parents use new "kinds of bites" (Bateson 1972), that is, new kinds of utterances, to signal that it is time to leave the parents' habitat?

Ability to discriminate sufficiently is not always just genetically given and therefore deterministic. Some species use complex communication systems and must learn to communicate, or rather, learn to utter properly and hence functionally as a species, as is often the case for instance with bird singing (Håkansson and Westander 2013: 176). Mating and copulation may consist of pre-procedures and specific rituals of copulation that need to be practised to achieve success. Birds, insects, fishes, and apes are examples of nestbuilding animals. Given programmed building patterns have to be adjusted to shifting environments. Others are travelling or migrating, for food or mating, individually or collectively, as do desert elephants and mountain gorillas, some birds and long-lived big fishes. In many of these activities youngsters must learn to cooperate and over time take different roles, as with joint hunting or shared up-bringing of the next generation. All such activities are mixed with communication and different kinds of sign-use in partly new contexts, allowing for socialising to and learning of genres that are new to youngsters.

In Ruth Finnegan's *Communicating. The Multiple Modes of Human Communication* (Finnegan 2014: 50-51) she distinguishes between seven characteristics of six different main channels of animal communication. These seven are: speed, spatial range, duration/persistence, effectiveness in noisy conditions, effectiveness round obstacles, ease of locatability and complexity of the six channels, which are - auditory, visual, tactile, chemical/olfactory, seismic, and electrical. In other books and studies that describe animal communication in a zoo-semiotic perspective, a main focus is traditionally on the level of signs and utterances in each of these channels or modes. For instance, according to Jensvold, Wilding, and Schultze (2014: 21), who have done a meta-study of forms of chimpanzee communication, chimpanzees communicate with vocalizations, gestures facial expressions, and postures. Vocalizations are of many types, such as 'pant hoots', 'screams', 'barks', 'grunts', 'pants', 'whimpers', 'squeaks', 'cough grunts', and 'laughter' and different other mouth sounds, and occur differently in specific contexts. Gestures vary in modality and chimpanzees are able to regulate them appropriately with the attentional state of the partner. Communities may have specific repertoires of gestures and the same gesture among communities may vary in form. Chimpanzee facial expressions are said to be tied closely to vocalizations. Postures seem less researched. As an example, a submissive chimpanzee may use a 'crouching' posture to express subordination.

As can be seen, terms for kinds of utterances are put in inverted commas. This is to hint that English is about to become the scientific language for biosemiotics, to which other languages have to adjust. This problem is partly related to anthropomorphism , which is a challenge, also for genre theory. 'Dance' and 'play', for instance, are notions for human, cultural genres, termed in English, applied in biosemiotics and ethology. Such

446 problems are probably unavoidable (Dennett 2018: 402). However, meta-analyses should signal an awareness for
447 the problem.

448

4 Exemplifications

4.1. 'Begging' as Utterance/Genre?

451 In a footage of chimpanzees, we can observe two young males. They are 'friends', one a bit older and one
452 younger (BBC 2014). The former has caught and killed a pray, partly by the help of the younger. He runs up in a
453 tree, turns his back to the younger and starts eating. Slowly the younger approaches him from behind, sits
454 politely(?) and waits. The older one does not turn. So far this is my textual description, as an observer,
455 constructing a *context* for an utterance. What follows is what I, as a researcher, suggest could be a biosemiotic
456 utterance:

457   *The younger stretches out the hand, so that the older one shall see it.*

458 The movement and the position of the arm is form. Whether this move or gesture has a particular reference
459 ('meaning') is not in focus in this context. What counts is the form's possible function as meaning (intention). A
460 stretched arm and open hand are in a semiotic sense signs, but they can even work as an utterance by the very
461 function as an addressed act in the given context, there and then. Among humans such a move could be seen as
462 an appeal to negotiate sharing and for instance be genre-labelled as begging. Jensvold, Wilding, and Schultze
463 (2014: 26) report that infant chimpanzees use particular social gestures for begging. For a discussion of chimps'
464 gestures as communication, see even Moore (2013). To me, as observer, the younger seems 'polite' (or slightly
465 'submissive') combined with a rather 'neutralised' or impassionate face expression. Such labelling, and hence
466 categorisation, can in some cases be characterised as anthropomorphising (Augustyn 2011: 211). When
467 validating, we as researchers should make this possible fallacy explicit, for instance as here, by using inverted
468 commas or by offering several tentative terms, when interpreting (see table 1).
469   An excerpted episode, like this one, can catch something significant, but even loose or manipulate the
470 larger context. The contextual relationship between the two chimps is more complex than first explained. The
471 younger has earlier been thrown out of a chimp group and is searching for a friend. Since he is still young, he is
472 not yet an experienced and skilled hunter. The older one has in a sense 'adopted' him but is dominant in the
473 relationship. The producer of the TV-program, (BBC 2014), from which the sequence is taken, has
474 contextualised this episode differently than I have, as a researcher. My excerpted utterance is a segment of a
475 longer, narrative episode, sequenced in time, as 'story', a different context.

4.2 Space/Place as Utterance/Genre?

477 A male Japanese white spotted puffer fish, also called blowfish, can build an intricate patterned construction of
478 fine-grained bottom-sand to attract females for mating (NRK 2015). He may work around the clock for almost a
479 week to get his circle-formed 'sandcastle' in perfect shape. The mental 'drawing's for the construction is already
480 in his head, and is mathematically fairly precise, consisting of about 24 narrowing openings in the sand, all
481 leading into a circle that again leads into a centre. This has a somewhat different pattern and is clearly
482 constructed as a 'middle'. Blowfishes are about twenty to forty centimetres. The diameter of the construction is
483 probably between one and a half to two meters. It functions as a nest, that hopefully will attract a female and be
484 inspected. If accepted, the two will start spawning, which follows a particular pattern. The male will first wipe
485 out the structure of the centre. The female will then lay the eggs, while the male bites, holding on to her lip,
486 while they vibrate for some seconds together. Afterwards the male blur the sand and the eggs, by whirling up
487 sand for protection. This sequence is repeated a couple of times. When finished, the female leaves, and the male
488 stay put to cover and protect the eggs. A positive outcome of the invitation is not given. No female may turn up,
489 and if someone does, she may reject the offer and leave. Also, as one has seen with other fish species, other
490 males can disturb, both building and mating (Ramesh and Mohanraju 2018; Matsuura 2015).
491   Here the structuring of form becomes a space as it materialises. The final result may not have a
492 particular reference, but we might imagine that in the fish's mind the enterprise is about something. The

493 constructed form, intended to work as a 'nest', as a 'content', and addressed to a possible female for mating and
494 hatching, can be seen as an utterance. As a set of utterances, and thus actions, the whole sequence may take on
495 the character of a genre, if being repeated at different times in places by other males of the same species. The
496 structure is obviously evolutionary given, pretty much in the same way as structure for building honeycombs are
497 for bees. However, as David Attenborough underlines in a BBC-program on birds and nestbuilding (BBC Earth
498 2009), any mentally given construction needs to be built in the real, in a concrete, unique material context that
499 may vary from time to time and from place to place. To conclude – both the construction and the following
500 processes are probably recognisable as kinds of kinds (etc.) for form, action, and time/place, and perhaps partly
501 even as 'content' or reference.

502 **4.3 Kinds of Birdsong as Genres?**

503 Research on birdsong seems to develop empirically both in a strong biological and in a communicative
504 pragmatic direction (Bar-On and Moore 2017). The former is indicated by increased number of studies on
505 physiological conditions for song, and the latter by the many new projects that focus on the relationship between
506 (biological) form and (social) function. Further, Naguib and Riebel's article title *Singing in Space and Time: The*
507 *Biology of Birdsong,* seemingly underlines biology, but works also as a good example of how biology can be
508 connected to communication and social dimensions (Naguib and Riebel 2014). Their article works as a quite
509 extensive literature review too, where research in this field is clustered around genre-like themes such as song
510 functions, learning to sing, learning to listen, from individual learning to song cultures, song structure, singing
511 activity, and vocal interactions.
512   The concepts used and perspective applied reveal a direction for this type of research close the project's
513 epistemology. In their figure 13.2 Naguib and Riebel (2014: 235) give an illustration of functions of birdsong,
514 pointing out four examples of what I would call life-genres: territory defence, mate attraction, mate stimulation,
515 and pairbond maintenance. Later in the text it is claimed: "In many bird species, males change their singing
516 behaviour after pairing, suggesting that the function of song differs between the period of mate attraction and the
517 period thereafter" (Naguib and Riebel 2014: 240). The ad-/verb used for different kinds of singing, is address/ed.
518 An increasing amount of research shows that functional birdsong is not always given. There are sub-genres
519 acquired during a development. Chaffinches have a song type repertoire of 1–5 song types. A tutee may develop
520 through song type stages, for example subsong, plastic song, and crystallized song (Naguib and Riebel 2014:
521 236).
522 A conclusion after this short visit to the rich field of research on birdsong as communication is that the field is
523 promising, given the project's interest in finding newer empirical research that can be studied from the
524 perspective of life-genres. It often takes different aspects, such as form, information, function, time, and space
525 into consideration, as well as a possible dynamics between individual and collective perspective. In total these
526 premises open up for meta-studies of birdsong as utterances with potential to be perceived as (relatively open)
527 system of genres and sub-genres. Yet, birds are vertebrates, but not on the evolutionary line of mammals, leading
528 to great apes and humans. This fact does not imply that the main hypothesis necessarily is weakened. Vertebrates
529 do share several basic life-conditions and behavioural patterns that could generate similar life-genres for birds
530 and mammals (Griffin 2013).

531

532 5. Summary, Problems, and Endings

533 The article started by hypothesing that a foundation for life-genre as a phenomenon may have developed through
534 evolution, arguing that communication, and hence utterance and genre, may be omnipresent in culture and
535 nature. Semiotic terms replaced linguistic ones as tool for analysing utterances and genre in animal
536 communication. Both utterance and genre were seen as shaped by the intertwined aspects form, content, act,
537 time, and space. Sign, utterance, genre and lifeworld were described as interrelated levels, underlining that the
538 intimate, dialogical relationship, especially between utterance and genres, is crucial for studying life-genres. In
539 part four I gave three different examples of what utterance could mean, one showing the utterance as an act, a
540 second showing space as part of or as an utterance, and a third demonstrating the relevance of research on
541 birdsong for the study of life-genres.

542   In the course of developing and describing this framework several challenges have been postponed or bypassed.
543   In the following I pinpoint nine, by phrasing them as (self-)critical questions:

544   -   Are relations between signs (as parts) and utterances sufficiently explained?
545   -   Are relations between genres and system of genres sufficiently explained?
546   -   Is the concept kind too simple and general for analysing complex communication?
547   -   How can genres be researched when they are abstract (inner) phenomena?
548   -   If utterances and genres consist of aspects, how can they be interpreted, as a whole?
549   -   What kind of validation is possible, when blurring biology and semiotics?
550   -   If no reference occurs in analysed communication, is the actual sequence still an utterance?
551   -   Is there a difference between form determined by genetics and form as individual structuring?
552   -   Is the concept chronotope possible to operationalise?
553
554   As a tenth point, one could ask critically whether the project's broad communicational perspective implies that
555   behaviour is within communication or vice versa? In a genre perspective it should be unproblematic to use the
556   concept behaviour for animal activity. Biosemiotics has challenged ethology though by claiming that some,
557   much, or most behaviour might be investigated as possible signs, or in my terms, as kinds of communication
558   (Hoffmeyer and Kull 2011). Act is one of five key aspects that define utterances, and can of course be seen as
559   behaviour, and vice versa. However, moving research focus from mater to mind, the concept behaviour is still
560   necessary, but insufficient. Acts might be accompanied by or occur with other aspects, and thereby turning acts
561   into utterances, into combinations of symptoms, symbols, and signals, indicating a communicating will. Also,
562   from a phenomenological perspective creatures may perceive their surroundings as communication.
563   When the project will do meta-analyses of many other researchers' findings, it will be confronted with a
564   cacophony of different concepts stemming from many theories in different fields and disciplines. It will be a
565   challenge to decide to which degree such notions are compatible with the framework's key concepts. This
566   challenge concerns both the question of number of levels and the compatibilities between aspects. In figure 5 it is
567   suggested how such different concepts from different empirical sources, may fall into the five-aspect array. The
568   categorisation is tentative and preliminary and is meant to foreshadow what interpretation of relevant ethological
569   and biosemiotic concept may look like. Here concepts are put in five categories. The pentagonic model opposes
570   such simplification
571

Form	Content	Act	Time	Space
sender	reference	effect	sequence of	terrain
utterer	information	call	time elements	environment
speaker	object	use	timing (the right	habitat
symptom	representamen	interpretant	moment)	particular
structure	meaning concept	receiver	length and	spaces/places
expression	symbol	function	stretches of time	for particular
affection	aboutness	influence	speed	functions,
emotion	indication	addressee	past as memory	such as
	representation	perceiver	future as	drinking,
	symbolic	intention	symptom of	feeding,
	reference	addressivity	conscious	hunting,
	environmental	signal	planning	'working',
	signal,	reception	awareness of	resting,
	semantic signal,	interpretation	cycles such as	nesting,
	representational	listener	'day' and	(own) body as
	function	inferences	'season'	'place'
		action	lifespan time	
		doing		
		response		

573   Figure 5. Overview over communicational and semiotic concepts broken down on key aspects of utterances

574   Finally, what could be the significance of the article for biosemiotics, if any? Historically biosemiotics has tried
575   to bridge a gulf between sign and umwelt. Two forces have been dominant, biology mainly prioritising micro-
576   cosmos, such as cells, as research domain, and semiotics and philosophy often favouring macro topics, such as
577   mind and cognition (Emmeche and Kull 2011). The project disturbs such dichotomies, for several reasons.
578   Epistemologically the article asks for a place in the middle, suggesting a new bridge from micro to macro.

579 Semiotically it proposes new analytical levels for the study of signs in a social world. Perhaps most significantly
580 the article offers a contextual (chronotopic) triadic view of macro communication in context, which equals and
581 balance the importance of aesthetic, cognitive, and social research approaches.
582   Precisely such triadic aspects can be found, respectively, in three highly relevant publications: *The*
583 *Evolution of Beauty: How Darwin's Forgotten Theory of Mate Choice Shapes the Animal World - and Us* (Prum
584 2018), *From Bacteria to Bach and Back. The Evolution of Minds* (Dennett 2018), and *Evolution of Sociality in*
585 *Marmots* (Armitage 1999). Besides, there are relevant publications dealing with time and with space in a
586 biosemiotic perspective, such as *Time-plans of the organisms: Jakob von Uexküll's explorations into the*
587 *temporal constitution of living beings* (Magnus 2011) and *Proxemic behaviour: A cross-cultural study* (Watson
588 2014). The three former publications demonstrate how studies of key aspects of communication can be given
589 both a synchronical semiotic basis and a diachronical evolutionary perspective. However, all five publications
590 tend to favour one aspect, while other aspects risk to be backgrounded. The framework aims at interrelating these
591 five aspects and their sub-kinds, by arguing that to utter is to combine oneself, a 'thing' and another by
592 expressing structured form, referring to a possible something, and addressing another in time and space.
593 Utterance, genres, and life-genres will consist of combined expressivity, referenciality, and addressivity,
594 incapsulated in a contextual chronotope (Bühler 1934; Bakhtin 1986). In other words, to study animal behaviour
595 as utterances and (life-)genres, is to try to answer the how, what, why, when, and where of communication.

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