Abstract: The fields of Cognitive Linguistics and gesture studies have begun to find each other of great interest in recent years. The cross-recognition is making for a healthy relationship because it is not a simple “mutual admiration society”, but a relation in which recognition of the other involves change and development on the part of each. Taking the usage-based tenet of Cognitive Linguistics seriously in light of video-recorded data of talk raises questions about the very object of study in Cognitive Linguistics, what its nature is, and what its scope is. The still nascient modern field of gesture studies calls for empirical research tied to the real life contexts of gesture use in order to gain a more complete picture of the phenomena “at hand”. Discussion of the place of studying multimodal communication within Cognitive Linguistics leads to consideration of broader political, economic, and sociological factors in academia which can play a role in determining the future of the field.

Keywords: usage-based, multimodal communication, spoken language, gesture

1 Introduction: The current state of interconnection between Cognitive Linguistics and gesture studies

It has now become common to find several talks, if not a whole panel, devoted to gesture research at cognitive linguistic (CL) conferences; it is regularly listed in CL calls for abstracts as one of the topics on which papers are welcome. The same interest in papers involving gesture research can be found in journals such as *Cognitive Linguistics*, *Review of Cognitive Linguistics*, and *Cognitive Linguistics*. 

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Semantics. We find a comparable situation in sub-fields within CL: work on gesture studies can also be found at conferences devoted to metaphor studies or construction grammar, for example.

New research groups are appearing that take a cognitive linguistic approach to analyzing multimodal communication, with some of this work being supported by funding from national science foundations (such as the one acknowledged in this article for the international network project studying verbal and co-verbal means of event construal across languages). The evidence points to the institutionalization of gesture research within CL. Indeed, the field of CL is at the forefront of supporting this link (Cienki 2010a, 2013a). No other school of linguistics has embraced gesture studies to the extent that CL has (Kok and Cienki 2016). Furthermore, this interaction is mutual in nature – not just one of gesture research being taken into consideration in CL, but also the inclusion of research employing various theoretical approaches from CL in gesture studies. Given the interrelation that has become established between CL and gesture studies (and research on multimodal communication more generally), the connection is not going to disappear any time soon.

What first convinced me and some other cognitive linguists of the importance of paying attention to multimodality in communication were the claims made by David McNeill in 1992 in *Hand and Mind*, a book which served to bring the research on gesture to a broad audience. He argued that co-speech gestures arise from the unpacking of speakers’ idea units (“growth points”) in real time, a process that involves back and forth interactions between the morphemes and constructions available in the language being spoken and the imagery that is part of the speaker’s idea units. This idea resonates with Slobin’s (1987, 1996) thinking-for-speaking hypothesis, a connection made more explicit in McNeill’s later work (McNeill and Duncan 2000). The link to claims made in Cognitive Linguistics about the basis of semantics in conceptualization was clear. The research topic in which I saw an immediate connection was that of conceptual metaphor theory: McNeill picked up on this research in its early years in the 1980s (McNeill and Levy 1982; McNeill 1985) and argued that if metaphor has its basis in patterns of thinking of one domain in terms of another, we should see evidence of this in some way in speakers’ gestures. If speakers are thinking in terms of imagery from the metaphoric source domain, we might expect to see some representation of that imagery in their gestures. Indeed, a line of research has been following up on this idea ever since, partly confirming the hypothesis, but also partly raising questions in return for conceptual metaphor theory about the nature of metaphor and the degree to which, and how, cognitive activation is inherently a part of metaphor use (see, for example, Casasanto and Bottini 2014; Cienki 1998, 2005, 2013b; Cienki et al. 2008a; Müller 2008; Sweetser 1998).
2 Researching talk as multimodal communication raises theoretical and methodological questions for CL

Engaging in research on gesture inherently takes one to video recording speakers, or at least viewing video-recordings of them, as data. The myriad decisions to be made that confront a linguist when first setting out to transcribe video data of talk can be overwhelming. But if one’s starting point is that gesture should be taken into consideration as well, the number of questions can be multiplied several times over in light of the visual information at our disposal when viewing a person speaking. An interesting point is that while this issue can seem daunting to the researcher, it appears to be largely unproblematic for the language users themselves who are engaged in the interaction.

The first issue can be: what kind of movements does the researcher want to include for analysis? While theoretically “gesture” can encompass any kind of visible, effortful, bodily movement (Kendon 2004), normally any particular study focuses on specific part(s) of the body, out of both practical considerations and in light of one’s research goals. Hand, head, and/or eye movements have become the most common ones to be considered by linguists researching gesture with speech. The hands have a special status because of the forms and movements they can produce based on human physiology (Streeck 2009: Ch. 3), allowing them to serve a broad range of communicative functions. In particular, manual gestures can represent ideas in space in a way that is much less feasible for other bodily articulators.

Language use clearly takes place in many contexts, in different registers, and in different genres. If we take seriously the tenet in Cognitive Linguistics that it is usage-based (e.g., Barlow and Kemmer 2000), it would seem that an ur-context of language use that should be a priority for linguistic study is what Clark (1973) has called the canonical encounter. This is one in which people are facing each other a short distance apart, and thus are in each other’s “positive perceptual field” for the perception of both verbal and nonverbal messages from each other (Clark 1973: 34–35) if they have typical vision and hearing. Being true to the usage-based commitment means giving greater recognition to the importance of studying face-to-face communication via video recordings and other means within CL. Indeed, the rise of digital technology allowing for this in the past decades has revolutionized what is even possible for linguists to study.

If we take seriously that an important focus in CL should be spontaneously produced language in face-to-face settings with other human interlocutors, how much behavior should be taken into account for an adequate linguistic analysis?
What behaviors should be included in a (cognitive) linguistic analysis? This expansion of the scope of what counts as data for analysis in Cognitive Linguistics raises new theoretical questions for the field, such as: what counts as language? Langacker proposes that the range of expressions that are part of a usage event (that could become conventionalized as part of the phonological pole of a linguistic sign) is very broad: “it includes the full phonetic detail of an utterance, as well as any other kinds of signals, such as gestures and body language (conceivably even pheromones)” (Langacker 2008: 457). While some may find his parenthetical suggestion humorous, it is clear that what Langacker is really presenting is a theoretical framework that is not simply linguistic, but one with a broader semiotic scope (Cienki 2010b). Communicative usage events based on the canonical face-to-face encounter, even if they are digitally mediated audio-visually, are different in nature and in substance from those when the interlocutor is not co-present and cannot be seen or heard (Cienki 2015). The behaviors that can become conventionalized and entrenched from talk-based and writing-based communication are fundamentally different along various parameters (perceptual, temporal, spatial, etc.). Consequently, in line with research indicating the prototype nature of linguistic categories on different levels (such as that of the phoneme, morpheme, word, and syntactic construction) (Taylor 1995 [1989]), I have proposed that language itself be considered a prototype category, with lexico-grammatical items as the default central exemplars, and related semiotic systems (such as – in the case of talk-based communication – non-lexical sounds, wordless intonation contours, different kinds of gestures, etc.) constituting categories that can overlap with the semiotic system of language to varying degrees, dynamically, along varying time scales (Cienki 2015; Cienki 2012, 2013a). This approach would apply both to individual spoken languages as categories and to the broad category of what constitutes language. It resonates with calls like those by Kravchenko (2006) to bring (cognitive) linguistics more in line with the semiotic bases of language in biology.

There is also resonance here with issues being confronted in the field of sign language linguistics. Codified ensembles of hand shapes, hand orientations, movements, and use of space that are normatively accepted as signs in a given sign language may be used with gestural qualities (e.g., producing them in non-canonical spaces) (Liddell 2003) and a stream of signing can be interspersed with gestures and forms of constructed action, in which reporting of another’s actions can be expressed via an ad-hoc demonstration (Quinto-Pozos 2007). Ultimately Wilcox and Xavier (2013) propose a continuum between the categories of sign (of sign languages) and gesture, each category constituting a “cloud” of behaviors, the two of which can overlap with each other to varying degrees at various times.
The discussion above has implications for the question of how extensive CL’s purview can or should be. Witness the ease with which we talk about research on text and images, analyzed in terms of conceptual metaphor theory or blending theory, as being research in CL. Is it the basis in theory that has constituted some of the building blocks of CL that makes a study a cognitive linguistic one? This appears to be the case, judging from the work at CL conferences and in CL-affiliated journals. The way the issue plays out over time will develop out of decisions by journal editorial boards and by scientific committees of CL conferences. What is the relation of CL to the growing self-identified field of Cognitive Semiotics, which now has its own journal, international association, and conference series? The two overlap, but only to some degree. The status of CL in the future will be at least partly tied to the negotiation between these two fields of academic study.

3 Talk viewed as multimodal offers different phenomena for investigation than does decontextualized language without regard to modality

Once one has analyzed video of spontaneous talk as data, especially of talk in interaction, it becomes difficult after that to return to using examples based upon introspective intuition. First, one sees how rarely one encounters such examples in actual spontaneous spoken language. One factor at play is the written language bias in linguistics (Linell 2005), which CL is also subject to. That is: examples created from one’s intuitions about language use more often than not reflect written language use rather than actual spoken language use. The examples produced from introspection may be thought of (by their producer) as modality neutral (having the potential to be found in written texts or spoken discourse), but in fact, more often than not, such invented examples are not of the form produced by speakers conversing.

In the process of doing transcription onself, one sees how easy it is to fall into the trap of following the conventions of the written form of a spoken language (assuming there is one that is conventionally used), “correcting” what speakers said, often inadvertently. The matter becomes more complex when taking video data into account. One finds the same kind of “hypercorrection” can come into play in gesture analysis. When citing a gesture form that one has seen produced in video data, gesture researchers sometimes become aware of having schematized or somehow “normalized” the gesture form that they saw. Sometimes this can involve
making the movement oneself in a more exaggerated way to someone else to exemplify it (“he swung his arm like this” while swinging one’s own arm in an arc that was much bigger than the speaker’s original gesture), and sometimes it involves an influence of the semantics of the words that accompanied the gesture (e.g., reproducing a gesture that went with the words “pull out” with a more prototypical hand shape than that used by the original speaker-gesturer in the video data).

The same problem is known by corpus linguists, even by those just working with data that was produced in written form (not transcribed from speech). They find that many classic examples for linguistic analysis are sentences (usually grammatically complete sentences) that people who are not linguists have hardly ever produced. For example, though one might think people in conversation say a full noun phrase with a transitive verb and a full noun phrase as the object of the verb (e.g., “My PhD student gave her first talk at a conference”), in fact, it is more likely in a conversation in English to express this as something like, “You know my PhD student, Mary? Well, she just gave her first talk at a conference.” This shows the preferred argument structure that has been found from corpus research with spoken English and a number of other languages (Du Bois 2003): there is a differential use of full noun phrases and pronouns, such that speakers’ preferred position for placing full NPs is as objects of transitive verbs or as subjects of intransitive verbs. Referents are more likely to be introduced in these ways and then referred to subsequently with pronouns as subjects of transitive verbs. It is corpus work with spoken language use that has revealed such patterns, rather than linguists’ intuitions about what kinds of utterances speakers produce. Looking at real spoken language usage can reveal that our object of investigation is not what we could have predicted based upon intuition.

In addition, video-based research of spoken language use is serving as a testing ground of some theoretical proposals in CL. The research field of metaphor and gesture, mentioned above, is a good example of how CL has fared on its “Cognitive Commitment” “to make one’s account of human language accord with what is generally known about the mind and brain” (Lakoff 1990: 40). Gesture is one of the domains of non-verbal behavior that has provided evidence for the claim that metaphors are part of thought, and not just verbal language, and that cognition has an embodied basis (Cienki et al. 2008b). An approach currently prominent in cognitive science is investigating the idea that sensorimotor representations of concepts can give rise to our production of linguistic expressions as well as gestural behaviors – about both physical and abstract domains.

An important direction here is the research on gestural behavior in an attempt to gain insight into processes of mental simulation. To summarize
Marghetis and Bergen’s (2014) overview of this work, there is evidence of connections between mental simulation and gesture both in terms of production and comprehension. It appears that speakers’ mental simulations shape their gesture production; for example, Hostetter and Alibali (2008) present an argument that has become quite influential in gesture studies, namely that gesturing is the product of mental simulation of action. Conversely, speakers’ gestures appear to shape speakers’ own simulations; representational gestures have been argued to help speakers maintain mental imagery when speaking (de Ruiter 2000), specifically by helping them organize spatio-motoric information (Kita 2000). In addition, speakers’ gestures have been shown to shape listeners’ simulations. For example, Cook and Tanenhaus (2009) show that seeing a speaker who is talking and spontaneously gesturing about solving a building-puzzle can lead viewing-listeners to reproduce the gestured information themselves later in solving the same task.

Some empirical studies have lent support to the idea that simulating bodily experiences also plays a role in processing metaphoric expressions (e.g., Boulenger et al. 2009; Gibbs 2006). Wilson and Gibbs (2007) for example, demonstrates that performing a bodily action (grasping, that is: extending and then closing one’s hand) facilitates understanding of a metaphoric expression that names that movement (e.g., grasp an idea) versus doing a mismatching bodily action (such as chewing) or making no movement beforehand. The same was true even when just imagining making a specific appropriate bodily movement beforehand. Since “gestures serve in perceptual isolation of objects and thereby enact existing sensorimotor schemata that [can] have metaphoric equivalents in language” (Roth and Lawless 2002: 354), there is great potential for the study of gesture use in relation to verbal metaphor production – and in relation to the comprehension of metaphoric expression – as a way to potentially gain insight into embodied mental simulation of abstract notions (and in particular, of abstract processes that can be metaphorically conceptualized in terms of physical actions).

Another area in which attention to multimodality in language use has had an impact in CL is in the work on aspectual categories in language as reflections of different forms of event construal. This is based in part on theoretical approaches in CL such as cognitive grammar (particularly Langacker 1991), thinking for speaking (Slobin 1987), and simulation semantics (Barsalou 1999; Bergen 2012). The theoretical frameworks cited lead to one hypothesis that different grammatical partitioning of aspectual categories in different languages would be associated with different ways of construing events by speakers of those languages, which could be expressed via different qualities in their gesturing. Building on a study by Becker et al. (2011), the project on
“Verbal and co-verbal means of event construal across languages”, cited at the end of this article, is investigating gesture movement qualities accompanying verbs with past tense forms in French, German, and Russian. French, for example, has an aspectual difference in the past between the imperfect tense (imparfait) and the perfect tenses (such as passé composé) (Garey 1957). Russian, however, has one past tense form, which can be used with verbs of the imperfective or perfective form. An analysis of narratives elicited from native speakers of the two languages has shown that gestures used with the French passé composé were produced significantly more frequently with a visible pulse of effort than without, and the opposite was true with verbs in the imparfait. However, the Russian speakers produced significantly more gestures with a pulse of effort regardless of the grammatical aspect used in the past tense, imperfective or perfective. Despite the fact that a function shared by the French imparfait and the Russian imperfective aspect is “setting the stage” of events without characterizing them as complete or not, the differences found in speakers’ manner of gesturing suggest different forms of thinking for speaking with these two grammatical categories. The results are being further analyzed in relation to the greater connection of Russian aspectual usage to the verb’s lexical semantics versus the grammatical tense function of the imperfect and perfect in French (Cienki and Iriskhanova, in preparation).

In sum, the purview of some hypotheses and theories employed in CL (such as conceptual metaphor theory, simulation semantics, force dynamics, etc.) potentially pertain to more than just verbal production, and research on communication as (variably) multimodal can exploit their explanatory potential more fully. In turn, such research may reveal that the discrete categories we began with (such as “linguistic” and “gestural”) are sometimes more adequately handled as ensembles or composites (see Enfield 2009 on composite utterances).

4 Looking ahead: On CL and multimodal communication

There are various future directions that research in Cognitive Linguistics may take, each with different implications for what will become of the role of multimodal research within it. If we return to the issue of CL as being usage-based, this means it is/should be not merely a theoretical program, but also a field involving active empirical research.
One future direction might involve an interpretation, common among many psychologists, of empirical as primarily meaning experimental. A specific problem here is that what we know about gestural behavior in general, let alone what we know about how it differs cross-culturally, still limits the amount of variables that can be isolated for the testing of interesting questions. There is also the issue that a traditional focus of experimental research in psycholinguistics is on language comprehension, studies based on responses (often via participants’ reaction-time) to the reception of linguistic material as input. However, a usage-based approach cannot ignore the production side of language use, which brings us to the question of what linguistic research tells us if it is based on production in highly controlled settings (far removed from the complexity of the normal canonical encounter that leads to spoken language use). It is also worth noting the positivist approach to scholarship in most experimental research in psychology, behind which lie problematic assumptions that are traditionally not questioned. These assumptions include the “classical” model of category structure (Lakoff 1987), whereby the categories for which tokens are being counted are often assumed to have clear boundaries, allowing for replicability of binary decisions about whether something is an example of category X or Y. An additional assumption is the presumed correspondence of researchers’ categories to research participants’ reality of those categories. This is implicated in what the editors of this special issue characterize as the “reductionist” decision to approach language as just a mental phenomenon.

However, if the field of cognitive science is any indication, CL should beware of becoming dominated by this reductionist trend. Witness the special issue of the journal Cognitive Science (Volume 4, Issue 3, July 2012) devoted to the question of whether cognitive science still needs anthropology – a field whose tradition of richly contextualized ethnographic research has come to be seen as at odds with the reduction of variables needed for controlled experimental studies (the now dominant paradigm of research published in cognitive science). Various factors could reinforce such a trend in CL, including economic ones of administrators’ valuation of research from the natural and biological sciences (with clearer potential for money-making application) over research from the humanities (that may tell us more about the meaning of life in other ways than in terms of money); and political ones, of the funneling of various countries’ national science funding into channels that favor research whose quantifiable results can be presented in concise tables and graphs to bureaucrats in short amounts of time, as opposed to, for example, in narrative-based explanations from the humanities that can take more time to present.
An alternative possible direction for CL’s future could emphasize the experiential basis of meaning, building on the phenomenological perspectives that were central in the early years of Cognitive Linguistics (e.g., Johnson 1987; Lakoff 1987; Zlatev this issue). “Thick description” and qualitative analysis of the relation between speech and gesture as used in real-life contexts would play a central role here. It could mean a turn to a more humanistic psychology for inspiration, such as that espoused by Giorgi (1970), a redirection of psychology “away from its imitation of the natural sciences and toward a human science paradigm” (Appelbaum 2011: 519). Thinking along these lines could help reveal more about how the semiotic system of language overlaps with that of gesture, and on what time scales, allowing for a nuanced articulation of what might best be called “linguistic” (and in what spatial and temporal contexts) in the complex array of semiotic behaviors humans employ to communicate with each other.

What would the alternative direction, outlined above, mean for empirical research in CL? Analysis of video data of talk can help take the usage-based commitment seriously, achieving a connection to the lived experiences that give rise to verbal and co-verbal behaviors. Analysis of digital video data allows for taking immediate contextual factors into account more adequately than has been possible in linguistic analysis in the past, for example: just through note taking of details observed in the moment, which has long played an important role in linguistic anthropological fieldwork. We know only a small amount about the use of gesture with spoken language from the study of a small number of (mostly European) languages. There is a vast amount that we do not know about the relation of gesture to speech, and it is qualitative analysis that is needed first in order to establish what phenomena are in play: on the level of individuals’ behavior, within given language-cultures, and more universally/cross-culturally. Approached with the theoretical tools of CL, such research can also help overcome the implicit written language bias within CL.

It is true that work with audio-video data presents researchers with a huge amount of information, as noted above. This brings with it logistical challenges of data management. Some of this can be facilitated through collaborative team work on projects, such as that found in the project mentioned earlier on the multimodal construal of events; this is a cross-linguistic project involving data collected in Russia, Germany, and France.

However another approach is to amass a large database which researchers from around the world can access online for analysis. A first barrier here is obtaining informed consent from the participants recorded, allowing for such open access. One way of bypassing this issue is through the use of video
material that is already in the public domain. An example is the multimedia sub-
corpus of the Russian National Corpus, MURCO,\(^1\) created by the late Elena
Grishina of the Russian Academy of Sciences Russian Language Institute. It is
a closed corpus of films that has been coded for lexico-grammatical categories in
the speech and for form and function categories for gestures, allowing for
specific kinds of searches. This solves a logistical question as to whether
analyses done on the corpus by some researchers can be used by others working
on the same corpus. With this corpus, researchers can verify others’ results by
replicating the same search(es). While convenient for some projects, there are
limitations on what kinds of research questions can be posed with the pre-
established search categories. In addition, the material consists of feature
films, which would allow for research on topics such as behavioral stereotypes
(e. g., gestures produced when people are angry versus happy), rather than on
topics related to spontaneous thinking for speaking.

Another approach is taken by facilities of the so-called Distributed Little Red
Hen Lab (co-directed by Francis Steen and Mark Turner), working on the
NewsScape Library of International Television News.\(^2\) Rather than a corpus,
per se, this is a growing database of TV news broadcasts being recorded with
the closed captioning, providing a rough transcription that allows for text
searching of speech within and across broadcasts. (Compare also the TV News
Archive https://archive.org/details/tv.) The Red Hen has already proven useful
for the investigation of a number of topics drawing upon theoretical frameworks
from CL.\(^3\)

Many questions remain for the future about making large-scale analysis of
video data tractable. Partly it is a matter of technological advances, but at
present we are still in need of solutions like the kind of automatic gesture
recognition software that would be useful for detailed linguistically-based ana-
lysis of previously recorded multimodal communication.

5 Looking ahead: On CL in general

The odds that CL will continue to exist as a recognizable field of research in
25 years appear good. But this has to do not only with the scientific value of

\(^{1}\) http://www.ruscorpora.ru/search-murco.html
\(^{2}\) https://sites.google.com/site/distributedlittleredhen/home http://newsscape.library.ucla.edu/
\(^{3}\) See https://sites.google.com/site/distributedlittleredhen/home/2-publications for a sample.
what it brings to the table. Beyond that, we should not ignore the force of institutional momentum in academia. Once a discipline becomes more established, individuals’ careers become tied to its existence. In addition, not only scholars’ reputations but also their livelihood depend in part on the value they bring to their institutions. But there are also factors based in the sociology of science that should not be ignored. If a biennial conference of an association is something that its members continue to look forward to and find value in, this will help the field of study to remain vital. That is: if the social network involved in the discipline is strong (especially if it is strong in different ways); if it is interconnected, complex, and globally far-reaching; and if the members of the network enjoy seeing and interacting with each other, then the discipline has great potential to survive for a longer period of time.

It is not so easy to address the question of whether CL will exist as a separate discipline in another 25 years’ time. In some ways, it is already no longer a separate discipline. It overlaps in various ways with older traditions in linguistics (involving description of less commonly studied languages) and it interrelates with various strands of linguistics known under the label “functional” (see Nuyts 2007 for a discussion). Work in CL overlaps with some research in cognitive psychology (note the name of the relatively new journal exemplifying this trend: Language and Cognition) and with some research on multimodal communication – not only gesture studies, but also the long tradition of work on text and images applying conceptual metaphor theory and blending theory, especially to advertisements as data (e.g., Fauconnier and Turner 2002; Forceville 2008; etc.).

If we apply the important notion from cognitive psychology and Cognitive Linguistics of categories as possibly having center-periphery and family resemblance structures, with more easily agreed upon prototypical instantiations as well as more peripheral exemplars that overlap with other categories, then the status of Cognitive Linguistics as a category is not so much brittle as it is complex. The integration of aspects of it with other disciplines may be a natural outcome of category evolution (beginning with changes on the category periphery), but with some core CL ideas standing the test of time and remaining recognizable as such.

There is also the fact that in many countries, there are groups of linguists who consider their research to be cognitive linguistic in nature, and the reasons for this may vary. Sometimes it is because their work builds on a particular approach that became prominent in/as CL, such as conceptual metaphor theory, work on linguistic categorization, or the relation of language to cognitive/cultural worldviews, etc. In some cases, it is more that the research is based in semantics than in another branch of linguistics, and if it is seen as providing
insight into how speakers of a given language and culture think and view the world, then the work is seen as having an affinity with CL. Another case is where local traditions of linguistic research, perhaps not well-known outside the given country, are viewed locally as prescient of, and aligned in spirit with, the CL that developed in the 1980s and beyond. These various situations are not mutually exclusive and may overlap and reinforce each other. The bottom line is that CL has a certain “pull” for many linguists in many parts of the world. This magnetic appeal of CL should not be ignored. It could bode well for the strength of the CL “brand” in the future, even if it could mean greater diffusion of the category’s boundaries.

Finally, we should not ignore the likelihood that some other trend may develop in linguistics that we can not or can only barely imagine today, especially in light of what rapid technological developments will afford and what they may demand that we pay attention to. A quickly blossoming new discipline could outshadow current “language wars”, leaving them in the dustbins of history, as new issues are pursued with more urgent current relevance.

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