

1 •Through a combination of factors—(1) the low level *phonetic variation* inherent to speech
2 production, (2) the consequences of *lexical semantic ambiguity* and *misunderstanding*, and
3 (3) the tendency for speakers to *reproduce* the variation they perceive—sounds’ context-
4 specific properties may passively undergo changes. The small variations in which speech
5 sounds naturally engage are thus a means by which they take on new properties. Quite
6 simply, those pronunciations of words that sound less like other, phonetically similar words
7 are more likely to be perceived by listeners with their semantic content intact, and are
8 consequently more likely to be reproduced as these listeners become speakers. In short,
9 successful speech propagates, failed speech falls by the wayside. Communicative success or
10 failure thus drives patterns of sound change and patterns of sound alternation. Labov (1994):
11 “It is not the desire to be understood, but rather the consequence of misunderstanding that
12 influences language change.”

13 •Both allophonic (contrast-preserving) alternations and neutralizing (contrast-eliminating)
14 alternations may thus naturally evolve, as a passive, evolutive consequence of these slow-
15 going diachronic pressures on linguistic sound systems, though importantly, the prediction is
16 that neutralizing alternations in particular are more likely to evolve if heterophony is largely
17 maintained, and less likely to evolve if rampant derived homophony were to result.

18 •Herein, I explore one aspect of this evolutionary approach to phonology by inventorying the
19 linguistic domains over which a heterophone-maintaining pressure passively shapes and
20 maintains the lexical-semantic clarity of the speech signal, despite the existence of oftentimes
21 pervasive neutralizing alternations or sound mergers.

22 **(1) Heterophone maintenance in the phonological domain:** neutralizing alternations or
23 mergers are fully blocked from entering a language if they would induce significant increases
24 in derived homophony. Heterophone-maintaining neutralizing alternations, by contrast, may
25 enjoy free reign. For example, in Korean (Silverman 2010, Kaplan 2011), a huge amount of
26 neutralizing alternation is tolerated, because, by hypothesis, consequent derived homophony
27 is remarkably meager: heterophony is overwhelming maintained despite neutralization.

28 **(2) Heterophone maintenance in the phonotactic domain:** neutralizing alternations or
29 mergers that otherwise apply pervasively do not apply in particular phonotactic contexts,
30 because their application here would result in significant increases in derived homophony.
31 For example, Hindi (Ohala 1984) has a pervasive schwa-zero alternation (**təɾəp** “restlessness”
32 - **təɾpa** “cause to be restless”, **wapəs** “return” - **wapsi** “on return”), though with patterned
33 exceptions. Specifically, while schwa alternates with zero in would-be **VCəCV** contexts, it
34 does not alternate in certain **VCCəCV** and **VCəCCV**; contexts, that is, when the alternation
35 would result in three sequenced consonants, the middle of which would be perilously
36 susceptible to misperception, due to its lack of formant transitions: **VCCCV**. That is, the loss
37 of schwa in these contexts may lead to a percept involving only two—not three—consonants
38 (**VCCV**). At this point, the chances of inducing homophony increase dramatically. Under
39 even more particular phonotactic conditions—typically, when schwa deletion would result in
40 a nasal - homorganic stop - sonorant sequence (also found in non-derived contexts)—schwa
41 deletion is variably present (**kadəmbəri** ~**kadəmbri** “a novel”, name for a girl,
42 **puṇḍərik**~**puṇḍrik** “white lotus”). Since these medial consonants do not possess distinct place
43 cues, the phonetic properties of these particular tri-consonantal sequences are readily
44 recoverable from the speech signal, and hence run little risk of deriving homophonic forms.

45 **(3) Heterophone maintenance in the paradigmatic domain:** neutralizing alternations or
46 mergers that otherwise apply pervasively are blocked in those morphological paradigms
47 where semantic ambiguity would otherwise result. For example, Banoni (Mondon 2009,
48 Blevins and Wedel 2009), has a lexical vowel length contrast that is now being lost, though
49 with some telling exceptions: possessed nouns are marked *solely* by vowel length, and are
50 resisting the length merger. Thus **tama** “father”, **tama:** “my father”, **kasi** “brother”, **kasi:** “my

51 brother”. As earlier reported by Lincoln (1976), “Banoni speakers tend to shorten long
52 vowels, except when necessary for disambiguation”.

53 **(4) Heterophone maintenance in the pragmatic domain:** neutralizing alternations or
54 mergers that otherwise apply pervasively are blocked “on line”, due to situation-specific
55 semantic or pragmatic factors. For example, Catalan has an alternation involving final
56 devoicing. This voicing alternation is more likely to be nearly-neutralized (as opposed to
57 completely neutralized) if (1) the forms are minimally distinct on this voicing dimension (**rik-**
58 “rich”, **rig-** “I laugh, pres. ind.”; **duk-** “duke”, **dug-** “I carry, pres. ind.”) and (2) these
59 minimally distinct would-be homophonic forms are in contexts that would otherwise be
60 semantically ambiguous. Charles-Luce (1993): “[W]hen semantically biasing information is
61 absent, underlying voicing is distinguished, regardless of the assimilatory environments.
62 However, when semantically biasing information is present, vowel duration shows the
63 predicted effects of regressive voice assimilation”.

64 **(5) Heterophone maintenance in the morphological domain:** neutralizing alternations or
65 mergers may evolve, but any counter-functional consequences are offset by a concomitant
66 morphological response. The classic example here is coda attrition vis-à-vis compounding in
67 Chinese. According to most written evidence, Middle Chinese, unlike certain of its modern
68 reflexes, was predominantly monosyllabic, and only consonants that possessed oral
69 occlusions (**p^ʰ t^ʰ k^ʰ m n ŋ**) appeared in root-final position. Some contemporary dialects like
70 Cantonese retain these six consonants, but others, such as Mandarin, have drastically reduced
71 this set to only two members (**n ŋ**). This drastic loss of phonetic content resulted in a
72 significant amount of root homophony: Cantonese has about 1800 syllable shapes, but
73 Mandarin has only about 1300, with largely equivalent semantic reference (Duanmu 2000).
74 But concomitant with the attrition of its root-final consonants, Mandarin—unlike
75 Cantonese—co-evolved a huge inventory of two-root compounds, which means that its words
76 are now usually twice as long, and so have ample opportunity to maintain heterophony.

77 **(6) Heterophone maintenance in the lexical domain:** neutralizing alternations or mergers
78 may pervade the lexicon, but a would-be homophonic form comes to be replaced by a
79 semantically analogous heterophone. Such patterns, please note, are anecdotal by their nature.
80 One example of many: Bloomfield (1933) reports that, in certain Southern French dialects,
81 final **l** has merged toward final **t**. While Standard French has **bel** “pretty”, this dialect has **bet**.
82 Because of the sound change, the Standard Southern French word for “cock” (“chicken”),
83 **gal**, would be pronounced **gat** here. However, these southern speakers don’t use **gat**. Instead,
84 they use a variety of other local terms, including “chick” (**pul** in Standard Southern French,
85 but **put** here). Why? If **gal** had been maintained, it would have been pronounced **gat**, which is
86 also the word for “cat”, both in the standard dialect, and in the rural dialect. Bloomfield:
87 “This homonymy must have caused trouble in practical life; therefore **gat** was avoided and
88 replaced by makeshift words”.

89 **•Synchronic phonology is substance-free:** it investigates the mental organization of a
90 particular body of knowledge, and should thus be pursued in coordinated tandem with
91 learning theorists and cognitive psychologists. They learn from our data; we learn from their
92 theories. **Diachronic phonology is substance-rich:** the shape and change of phonological
93 systems derive from an exceedingly complex interaction of semantic (functional) pressures
94 and phonetic (formal) pressures that are, in turn, subject to passive, evolutive pressures that
95 are decidedly *functional* in character. Our job as phonologists is to isolate and untangle these
96 highly distinct though highly interdependent pressures, and to explicate and motivate their
97 interaction. In this paper then, I consider but one of many ways in which linguistic sound
98 systems respond to both phonetic and semantic pressures—the only components of linguistic
99 structure that are empirically ascertainable (Kiparsky 1973)—such that the communicative
100 function of language is inevitably fulfilled. (*Refs. to be supplied.*)