ON THE ORIGIN AND DISTRIBUTION OF UNIVERSALS

(1) what is under grammatical control
ing production, except for vision, which is perception)

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<th>grammatical control over computation?</th>
<th>called</th>
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<td>yes</td>
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McGurk

Lexicon

stress
down
\[ \sigma \sigma \]

\[ \begin{array}{c|c|c|c|c}
R & O & N & C & O
\end{array} \]

\[ \text{sh a r k y} \]

Lexicon

coaiculation
gradience
(2) post-phonological spell-out
examples
a. English agma
   [ŋ] is /ng/:
   - it occurs only after short vowels
   - it does not occur word-initially
   Gussmann (1998), Dressler (1981) for German
b. shortness of the preceding vowel is the diagnostic for a geminate
   1. distribution of short/lax vs. long/tense vowels in English
      short/lax vowels occur in closed syllables, hence the phonetically simplex t in city
      must be a geminate (not an ambisyllabic consonant).
      Hammond (1997)
2. Norwegian
   common gender       neuter
   peen                pen-t       pretty
   stuur               stur-t      tall/big
   søøt                søt         soft

(3) a. English agma  b. length = shortness of the preceding vowel

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<th>b.</th>
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<td>after phonological computation</td>
<td>x</td>
<td>x</td>
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<td>spell-out</td>
<td></td>
<td>†</td>
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<td>phonetic exponent</td>
<td>[ŋ]</td>
<td>[t]</td>
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1. Regulartiy has two sources: grammar and the real world

(4) two kinds of regularity
a. produced by grammar = result of a rule system
   vs.
   produced by non-grammar = result of physical (real-world) regularities
b. for any given regularity, how can we tell of which kind it is?
c. physical origin
   no exception, no compromise possible
d. origin in grammatical computation
   "exceptions" arise when the original extra-grammatical regularity is marshalled by grammar:
   - lexical marking
   - morphological restriction (for phonological processes)

(5) hence two kinds of universals
a. produced by grammar (a rule system located in the cognitive system)
b. produced by non-grammar (i.e. the physical, extra-cognitive world)
   examples from phonology / phonetics
   1. stressed vowels are longer
   2. vowels before voiced consonants are longer than before voiceless consonants
   3. k is more front before front vowels than before back vowels
(6) morpho-syntax (concatenation) vs. phonology / semantics (interpretation)
   a. morpho-syntax seems to lack (5)b extra-grammatical motivation of its properties
   b. only semantics and phonology have (5)b an extra-grammatical source

(7) phonology and semantics are a blend
   a. they are confronted with extra-grammatical patterns / sources of regularity
   b. which they marshal according to their own, real world-independent properties

(8) diachronic feed from the real world into grammar
   a. called grammaticalization
     in phonology, see the life cycle below.
   b. grammaticalization is categorization in language
   c. categorization in psychology:
      transforms a gradient (real-world) reality into a discrete mental object
   d. all items that are manipulated by grammar are grammaticalized real-world items:
      syntax: time, person, number, inalienability, animacy etc.
      phonology: labial, occlusion, palatal etc.
      semantics: quantification, negation, etc.
   e. a note on morpho-syntax:
      syntactic items are grammaticalized, but patterns / regularities / processes are not.

(9) life-cycle of phonological processes
    (rule aging)
    Baudouin de Courtenay (1895), Vennemann (1972), Bermúdez-Otero (2007, 2014)
    a. phonological rules come into being through phonologization, i.e., the grammatical
       knighting of some variation that is present in the phonetic signal.
    b. alternations are born as phonetic regularities, then move into grammar where they are
       first phonological but at some point start to add morphological conditions, followed
       by lexical factors. Finally they are levelled out or eliminated from the language by
       some other means.
    c. during this life-cycle, alternations become less and less regular: they apply to 100%
       of those items that satisfy the triggering conditions in their initial stage, but adding
       morphological and/or lexical conditions subtract more and more items from their in-
       fluence.
    d. ==>  
       exceptionless (phonetic) > morphological conditions > lexical conditions > ø

(10) a note on phonetics
    a. phonetics implements physical, i.e. extra-cognitive regularities
    b. but it also has cognitive aspects:
       some phonetic properties are language-specific and need to be learned
    c. whether the latter are grammatical in kind depends on your take on parametric varia-
       tion:
       1. stored and acquired independently of the computational system (classical view)
       2. a piece of the computational system (OT)
       Examples (from phonology): inventories, lower spell-out (phonology → phonetics).
2. What is a universal?

(11) what is a universal?
[all properties below need to be met]
   a. something that is true for all languages
   b. something that cannot be acquired by children
      [be careful with artificial language experiments: these are typically done with adults]
   c. something that grammar is unable to generate

(12) the remote island
Hale & Reiss (2008)
   a. typology:
      if X is absent from (or present in) all languages, it could be
      1. a systematic gap: grammar rebels against it (X cannot be generated)
      2. an accidental gap: there is this remote island where X occurs…
   b. logical problem
      the claim that there are pink elephants cannot be shown to be wrong by coming up
      with 5, 28, 1000 or five million grey elephants.

(13) mistakenly taking real world regularities for universals
[what Hale & Reiss (2000) call substance abuse]
   a. example from phonology:
      1. the real world produces a pattern where stressed vowels are longer
      2. this is grammaticalized by some languages: tonic lengthening
   b. what does that tell us about phonological universals?
      Nothing.
   c. the only thing we know is that phonology does not object managing a this pattern.
   d. we have no evidence as to whether would object managing the reverse pattern, i.e.
      where all and only non- tonic vowels are lengthened.
   e. ==> how can we avoid this confusion?

3. Crazy Rules

(14) Crazy Rules
evidence for and against universals in a given area
   a. crazy rules are rules that make no phonetic sense
   b. literature
      Bach & Harms (1972), Buckley (2000, 2003, 2004), Vennemann (1972), Hyman
      (2001), Scheer (2015)
   c. typically, theories try to discount crazy rules, which are said to be a number of things
      but the result of phonological computation:
      1. the lexicon, 2. allomorphy
(15) examples
a. Oboyan Russian
   Bach & Harms (1972: 16ff)
   after palatal consonants, pretonic non-high vowels appear as
   1. [i] if the following stressed vowel is [ɛ, ɔ, a]
   2. [a] in case the following stressed vowel is [e, o, i, u]

b. Sardinian
   1 → ρ / V__V, including in external sandhi

c. Southern Pomoan
   Buckley (2000, 2003)
   i → u / d__

d. Ndebele (Bantu, Zimbabwe)
   Hyman (2001)
   pβ, β, mb → tʃ, tʃ (ejective), dʒ, ndʒ / __w

e. French palatalization
   caru > [ʃ] cher, gamba > [ʒ] jambe
   k, g → tʃ, dʒ / __a

(16) how crazy rules emerge
a. crazy rules are not born crazy, they become crazy through aging
   (Bach & Harms 1972)

b. life-cycle:
   at birth, i.e. upon grammaticalization, a phonological process is fully regular, transparent and phonetically motivated.

c. hence
   k → tʃ / __i
   is a possible product of grammaticalization, but
   k → tʃ / __u
   is not.

c. one thing that can happen after some time are context-free substitutions of segments
   1. in a language with
      k → tʃ / __i
      all i's become u's.
      This produces the crazy rule
      k → tʃ / __u
   2. example from English:
      k → ts / __i  12th century
d eaffrication ts > s
      k → s / __i  today

(17) does grammar care?
   a. if grammar cared for rules to be crazy or not,
      it would object when a non-crazy rule becomes crazy: the computation would break down because grammar is unable to process craziness.

   b. in a number of documented cases this is not what we see:
      nothing happens, i.e. the rule becomes crazy and continues to work just as before.
   c. ==> grammar does not care.
why are crazy rules rare?
   a. because they are the result of diachronic rule telescoping.
   b. it takes some historical accident and time to create a crazy rule.
   c. many rules disappear along the regular life cycle before they can become crazy.

independence of the real world and its cognitivized version
(in linguistics, Saussue's Langue vs. Parole)
   a. wave length and colour perception
   b. relationship between time (real-world) and tense (grammar),
   c. dog (real-world) and dog (concept),

regarding phonology
   a. phonology is phonetically arbitrary
      overview: Bermúdez-Otero (2006: 498ff)
   c. consequences for OT
      if the melodic properties of phonological processes are arbitrary, the entire justification of markedness constraints disappears (Bermúdez-Otero 2006).
   d. reaction
      markedness constraints exist but are neither universal nor a finite set.
      Rather, they are language-specific, i.e. acquired/constructed on the basis of available data.

crazy rules diagnostic
   a. crazy rules are only ever melodically crazy.
   b. there are no cases on record where craziness concerns
      - stress
      - syllable structure
   c. the following crazy patterns do not occur:
      1. stress the antipenultimate unless the penultimate begins with a labial, in which case the initial syllable is stressed.
      2. open syllable shortening, closed syllable lengthening
      3. tonic lengthening in closed syllables
      4. compensatory shortening
      5. intervocalic strengthening, post-consonantal weakening

hence
   a. grammar does not care for melody
      anything may be turned into anything in any context
      ==> SPE was right regarding melody, post-SPE critiques were wrong.
   b. grammar does care for stress and syllable structure
   c. there are universals in stress and syllable structure, but not in melody
   d. computation
      1. in melody:
         turns X into Y in context Z. Period.
      2. in stress & syllable structure:
         does the same, but imposes universal restrictions on this computation.
(23) further support of the Crazy Rule diagnostic
separating melody vs. stress/syllable structure:
  melody is incommunicado with morpho-syntax
  (Scheer 2011: §660, 2012: §124)
  a. category-sensitive phonology
     récord vs. récórd etc.: never concerns melody.
  b. infixation
     Yu (2007): melody never contributes to the definition of the anchor
  c. phonologically conditioned allomorphy
     only properties at and above the skeleton are found to condition allomorphy, melody
does not. Scheer (2016)
  d. chunk definition (mapping)
     is the delineation of phonologically relevant chunks in the linear string.
     Empirical picture emerging from 30 years of Prosodic Phonology: prosodic phrasing
     is done on the basis of morpho-syntactic information plus
     1. information structure
     2. eurythmy
     3. size of the string
     4. pitch
     ==> melody does not contribute
  e. within phonology
     a trivial but hardly ever mentioned fact about the computation of supra-skeletal structure
     is that melody is never involved. [sonority is not melody]
     That is, melody never plays a role when
     1. stress,
     2. tone,
     3. syllable structure
     4. positional phenomena
     are computed, or when
     5. computational domains
     are defined (cycles, phases, prosodic constituents etc.).
     The following do not exist:
     1. "stress the penultimate when preceded by a labial, otherwise the ante-
        penultimate"
     2. "contour tones may only appear on long vowels or short vowels followed by a
        labial coda"
     3. "a C₁C₂ cluster is a branching onset iff C₁ is a labial"
     4. "l-vocalization occurs before another consonant, but only when the preceding
        vowel is back"
     5. "start a new computational domain every time you hit a labial"
4. Conclusion

(24) loci of arbitrariness
   (i.e. no universals here)
   a. lexica
      1. upper spell-out: morpho-syntax → phonology
      2. lower spell-out: phonology → phonetics
   b. melody
      items and patterns below the skeleton

(25) loci of universals
   a. origin: grammar (the cognitive system)
      1. morpho-syntactic computation
      2. stress- and syllable structure-related computation
   b. origin: non-grammar (real world)
      1. phonetic computation
      2. [semantic equivalent ?]

(26) parametric variation
   a. definition
      parametric variation
      1. is a property that is possible by UG, but prohibited in a particular language
      2. in a language where it is prohibited, grammar rebels against its violation (systematic, not accidental gap).
      3. needs to be acquired based on language-specific input.
   b. it occurs everywhere:
      1. in lexica
      2. in all types of computation (morpho-syntactic, stress & syllable, also melodic)
      3. phonetics

(27) broader debate
   a. Hauser et al. (2002)
      biolinguistic scenario of the genesis of language
      1. FLN (Faculty of Language in the Narrow sense)
         - absent in animal capacities, no development possible on these grounds
         ==> only morpho-syntax (Merge & Phase)
      2. FLB (Faculty of Language in the Broad sense)
         - present in animal capacities, the human version is a development on these grounds
         ==> phonology, phonetics, semantics
   b. quarrel with Pinker-Jackendoff
      around the question whether the emergence of language follows the regular selectional-adaptive scenario or was accidental, i.e. non-adaptive.
      Pinker & Jackendoff (2005a,b), Fitch et al. (2005)
   c. a central point made by Pinker & Jackendoff
      is that phonology is just as grammaticy as morpho-syntax.
d. do animals
   - have stress?
   - have syllable structure?
   - have parametric variation?
   - have a reaction against ill-formedness (language-specific or universal)?

e. can all these properties have developed on the grounds of animal capacities?

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