Surface-to-Surface Morphology: When Your Representations Turn into Constraints

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1. Introduction

In work going back over ten years (see Burzio 1991 et seq.), I have argued that surface forms of words, such as those in (1b), can be correctly calculated only by making reference to other surface forms, such as their respective counterparts in (1a), within a system of violable constraints that evaluates surface forms.

(1) a. phenómenon
américan

b. phenòmenólogy
américan-ist

While the words in (1a) are perfectly regular for stress, the ones in (1b) should rather be **phènomenólogy* (cf. *àbracadábra*) and **amerícan-ist* (cf. *antágonist*), respectively, leading to the conclusion that consistency with the words in (1a) is disturbing the normal effects of the phonology. The popularity of the notion of such surface-to-surface consistency or Output-to-Output faithfulness (henceforth

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* The present article is a revised and updated version of the one posted on the Rutgers Optimality Archive (ROA-341-0999; http://ruccs.rutgers.edu/roa.html).

For inspiring discussion and thoughtful comments, I am grateful to Bill Badecker, Diamandis Gafos, Bob Frank, Matt Goldrick, Fero Kuminiak, Ben Slade, Paul Smolensky, and Colin Wilson. Valuable assistance has also been provided by this volume's editor and referees, which I gratefully acknowledge. Presentation of related material at the venues listed below has also drawn much critical insight and constructive comments from those audiences, to whom I am grateful: University College, London (2/18/98); Yale University (4/13/98); University of Siena (Incontro di Grammatica Generativa, 2/26/99); Potsdam University (GLOW Workshop, 4/1/99); Georgetown University (4/19/99); University of Maryland, College Park (Mayfest, 5/19/99); New York University (1/21/00). All errors are mine.

 Many Morphologies, ed. Paul Boucher, 142–177. Somerville, MA: Cascadilla Press.

OO-F) has received a considerable boost by the work of Benua (1997), who developed it independently within Optimality Theory (OT, Prince and Smolensky 1993) as an extension of important work by McCarthy and Prince (1993, 1995) on reduplication, where surface-to-surface identity is also involved (see also independent work by Kenstowicz (1996) and Steriade (2000)). The introduction of OO-F into the theory has major reverberations for the general conception of morphology not pursued by Benua, however. One reason is the redundancy between ℜ-1 and ℜ-2 in (2).

(2)

Underlying Representation		Surface Representation
/**americ-an**/	⧫⧫⧫⧫⧫⧫	[am**é**rican]
⇓ ℜ-1 (WFR)		⇓ ℜ-2 (OO-F)
/**americ-an**-ist/		[am**é**ricanist]

In a system that combines OO-F with traditional morphology, the pattern of similarity across pairs like *américa*n/*américa*n-*ist* has two sources. One is the word-formation rule (WFR) that yields partially overlapping underlying representations (URs); the other is the OO-F system, which enforces surface-to-surface similarity. Given the redundancy, conceptual parsimony suggests that the relation that has proven necessary – ℜ-2 – should also be sufficient. What this means is that morphology should be reworked as a set of surface-to-surface relations – a proposition long advocated in seminal work by Bybee (1985, 1988, 1995). Another way to set the compass in the same general direction is to consider how allomorphic variation and allophonic variation constitute similar problems; witness the similar solutions within the serial theory, which had URs feeding into context-sensitive rules in both cases. It would seem incongruous then for OT to supplant the serial solution to allophonic variation, reducing it to constraint ranking with no reference to URs (Smolensky 1993, Kirchner 1997, Hayes 1999), while letting the serial solution to allomorphic variation stand with WFRs still feeding the phonology via URs. That too should rather reduce to constraint ranking, with no reference to URs.

There are additional reasons to replace WFRs with constraints, beside the redundancy in (2) and the allomorphy/allophony parallelism just noted. WFRs are rigid, inviolable devices, a property shown to be incorrect by the phenomenon of morphological irregularity, as in *compel*/*compUlS-ive, problem*/*problemAT-ic*, etc. Traditional approaches require "readjustment" devices to fix the output of the WFRs, but those are not an independent part of the system, and thus only state the problem rather than solve it.[1] On the other hand, in the system to be

1. For a survey of morphological readjustment devices within generative work, see Spencer (1991: index item "rule, readjustment"). The conceptual prototype of such devices is Halle's (1973) filter operating on the output of the WFRs. The text point is that the need to filter the output of the WFRs is just the proof that WFRs are not the right approach.

developed here, morphological irregularity is attributable to the fact that OO-F (now taking over the job of the old WFRs) is dominated by Input-Output faithfulness (IO-F), as in (3).

(3)

Input: /...***U***..***S***-*ive*/; Base: /*compel*/	IO-F	OO-F
a. compell-ive	*	
b. ☞compuls-ive		*

That is, in the proposed system, derived forms are no longer related to their bases by a common input or UR (ℜ-1 of (2)), but rather only by OO-F. This makes it possible to utilize the notion of input to express the degree of autonomy of a derived word from its base, as in (3). To put it differently, within the parallel organization of OT, a morphologically complex word can be appropriately calculated from two inputs simultaneously: one is the surface form of its "base," which is the output of another calculation, whence the term output-to-output faithfulness to refer to that relation; the other is information specific to the word being calculated, similar to the role of the input with morphologically underived words, whence the term input-to-output faithfulness to refer to that other relation. We will see later that OO-F itself applies to multiple bases rather than to a unique base, thus further increasing the number of simultaneous inputs. As an account of morphological irregularity, IO-F enjoys independent motivation, since it is needed in any event to account for phonological markedness, and it is thus superior to readjustment rules. The present account of morphological irregularity is in fact just parallel to that of phonological markedness (also a form of irregularity) in standard OT, as both will result from IO-F dominating the relevant source of regularity – OO-F and phonological markedness constraints respectively (see Burzio 2000a for further discussion).

The idea to be pursued, then, is that there is a general associative component in the grammar which subsumes both the OO-F constraints that have been proposed in the literature and the former word-formation machinery in an overall architecture of the lexicon which is fully parallel, with no UR, and which is exhausted by the three sets of constraints in (4).

(4) a. IO-Faithfulness
b. Markedness
c. Associativity/OO-Faithfulness

The first two are, of course, just those of standard OT. We will see that Associativity/OO-F (4c) works in a multidimensional space that includes the semantics, and is thus positioned, at least in principle, to take over the account of semantic relations formerly provided by WFRs.

The paper will proceed as follows. In the next section I make two general observations on OO-F effects: (i) their strength/rank is modulated by the

The complete article appears in *Many Morphologies*, edited by Paul Boucher, published in 2002 by Cascadilla Press. To purchase *Many Morphologies* or to find out more about the book, please visit our web site at http://www.cascadilla.com/manym.html or contact us:

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