Proceedings of AFLA 7

The Seventh Meeting of the Austronesian Formal Linguistics Association

Edited by
Marian Klamer

Vrije Universiteit Amsterdam
Department of Linguistics
2000
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The Seventh Meeting of the Austronesian Formal Linguistics Association

Held at the Vrije Universiteit Amsterdam
May 11-13, 2000-07-06

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Preface

This volume consists of papers presented at the seventh meeting of AFLA (Austronesian Formal Linguistics Association), held at the Vrije Universiteit on May 11-13, 2000.

For the first time in the history of AFLA, this meeting was held outside the North-American continent, and contained contributions by speakers from eleven different countries: New Zealand, Australia, Indonesia, Brunei Darussalam, Taiwan, the USA including Hawaii, Canada, the UK, France, Germany, and The Netherlands.

Apart from the languages that are traditionally well-represented at Austronesian conferences, we were happy to see that the program also contained work on relatively small or lesser described languages, such as the minority languages of Taiwan, North-West Borneo, Eastern Indonesia, Papua and Oceania.

Special themes of this conference were Iconicity and Argument marking. The papers in this volume show that the program covered a broad range of subdisciplines -- from discourse grammar, phonology, morphology, syntax, to semantics -- and that the authors are working within various theoretical frameworks. But despite the obvious differences in expertise, interest, and background, the atmosphere on the conference was typically AFLA: lively and constructive, with an average rate of attendance of about 80%. The papers in this volume deserve the same rate of attention.

This meeting has again furthered the unwritten mandate of AFLA to encourage the formal study of Austronesian languages, especially work by speaker linguists and junior scholars. Six scholars presented analyses of their native language, and more than half of the 45 participants subscribed as 'student'. This suggests that the future of Austronesian linguistics looks very bright indeed.

The eight edition of AFLA will be held in the spring of 2001 at the Massachusetts Institute of Technology (MIT) in Boston, USA. The principal organiser will be Ileana Paul.

Marian Klamer, Vrije Universiteit Amsterdam

Proceedings of previous AFLA meetings:


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Phonological structures and expressiveness: the role of iconicity in ‘the emergence of the marked’

Adrian Clynes, Universiti Brunei Darussalam

"Tis not enough no harshness gives offence, the sound must seem an Echo to the sense" Alexander Pope 1711

It is a commonplace crosslinguistically that exceptions to phonological regularities are often manifested in vocabulary broadly classifiable as ‘expressive’. Fudge’s observation echoes views dating back to at least the Prague School linguists (Uhlenbeck 1950, Trubetzkoy 1939):

Expressive words […] have a tendency in a wide range of languages to be associated with peculiarities of phonological structure […] including types of sounds, sound sequences and syllable-structures which can be regarded as peripheral in the language concerned (Fudge 1970:161).

In English, for example, long vowels and diphthongs never occur before [ŋ] – except in onomatopoeic words like oink and boing. Similarly, clicks and nasal vowels do not occur in the phonology of English – except in pragmatically-charged interjectional particles, such as tut tut! and huh? ([hù]) respectively.

It is generally assumed that departures from phonological regularities such as these, though recurrent crosslinguistically, are insignificant in number, and so can be safely ignored in a theory of language. Fudge however provided strong statistical arguments that this is not the case, and that for English at least the correlation pervades the lexicon. In Clynes 1995 I showed that this was true too in Balinese. The correlation is in fact predicted to occur by the hypothesis of ‘Foregrounding’, that marked structure at all linguistic levels regularly correlates with expressive semantics (Mukarovksy 1964, Leech 1966, Fowler 1984, cf Appendix, below). Still, just why Foregrounding occurs, and how it relates to a theory of language, remains to be clarified.

Writing on related expressive morphology effects (such as expletive infixation) Zwicky & Pullum (1987:338) assert that these are ‘not within the province of the theory of grammar as ordinarily understood, though […] certainly within the broader sphere of human linguistic abilities.’ I would argue that such phenomena in fact provide important information for a theory of grammar. Nonetheless, Zwicky & Pullum’s intuition is broadly correct: a nonlinguistic principle or principles is no doubt involved in interactions between marked structure and semantics, though clearly it interacts with linguistic principles. I argue in §2 for a physiologically-based iconic motivation for Foregrounding, which can be considered to manifest the ‘emergence of the marked’ (cf McCarthy & Prince 1994), (see §4). 1

1 The term ‘marked’ in Praugian usage has meanings such as: ‘what departs from the neutral’ (Keen 1992:390), even ‘unusual’ or ‘irregular’ (Waugh & Lafford 1994). In Optimality Theory the term has a different, if related, understanding: any structure violating a given constraint is said to be marked with
The paper has four parts. In §1 I exemplify and give statistical evidence for the operation of Foregrounding in the phonology of Balinese. In §2 I argue for a physiologically-based iconic motivation for Foregrounding. In §3 I discuss other approaches to accounting for the correlation, and show that they all need to be augmented by principles such as those argued for in §2. In §4 I briefly sum up and draw some more general conclusions.

1. EVIDENCE FOR FOREGROUNDING IN BALINESE. In Balinese, phonological structures which are demonstrably dispreferred in the language nonetheless occur, though where they do they predictably associate with expressive meanings. For example, complex syllable onsets represent a more marked option both in Balinese and crosslinguistically (see for example Blevins 1995, Prince & Smolensky 1993, McCarthy & Prince 1994). Where they occur morpheme medially in Balinese – the most marked option crosslinguistically (Steriade 1982, 1988, Golston 1996:759) – complex onsets associate particularly strongly with ‘expressive’ meanings. A representative sample is given in (1); it includes semantic types (defined below) typically associating with morphemes of this structure.

(1)  
damprat  'yell furiously at'  BAD, SENSE (sound)  
caplok  'eat piggishly, gobble'  BAD, SENSE (movement)  
bunjung  'burnt outside, raw inside'  BAD, SENSE (taste/sight)  
sirjad  'awkward, clumsy'  BAD, SENSE (movement)  
kaerit  'sound of spurtting water'  SENSE (sound)  
kables  'suddenly emerge, pop out'  SENSE (movement)

Similarly, exceptional ‘allophonic’ structures in Balinese predictably associate with expressive pragmatic overlay. High vowels in final closed syllables in Balinese are usually lax kucit [kucjl] ‘piglet’, katut [katut] ‘personal name’. The one exception to this regularity is in certain exclamatory usages:

(2)  
dut!  [du(:)t]  [dut]  ‘exclamation of derision’  
tin!  [ti(:)n]  [tin]  ‘sound of car horn’

Note that the distribution of [u] and [u] is otherwise purely complementary, as is that of [i] and [i]. For further examples involving other vowels and consonants see Clynes 1995.

Claims such as those exemplified above remain anecdotal, in the absence of (i) evidence for the phonological marginality of the structures concerned (ii) statistical evidence of a correlation with specific expressive meanings. Evidence that complex syllable onsets are dispreferred in Balinese comes firstly from productivity in coining new morphemes. The canonical shape of a morpheme in Balinese, as in the closely related Javanese

that a ‘more-marked candidate’ output in OT terms is ‘marked’ in a Praguan sense as well, hence refer loosely to ‘marked’ or ‘more-marked’ structures as a cover term for both.

Balinese has the following phoneme inventory: vowels /i, u, e, o, a/, consonants /p, b, m, w; t, d, n, l, r; c, j, n, s, y; k, g, ng, lh/.
(Uhlenbeck 1950), is a disyllabic CV(N).CVC sequence, where N is a nasal stop homorganic with the following consonant. Syllables with complex onsets, of shape CLVC(C), where 'L' represents any of /l, r, w, y/, also occur. All other things being equal, we would expect four times as many morphemes of shape CLV(N).CVC, or CV(N).CLVC, to occur as those of shape CV(N).CVC, containing only simple onsets. Instead, as Table 1 below shows, for morphemes of otherwise identical structure, those with simple onsets (row 1) consistently occur much more frequently than those with complex onsets at the left edge (row 2), while those with morpheme-medial complex onsets are even less common (row 3). In fact there are nearly 20 times as many morphemes of the preferred shape CVVC as there are of shape CVCLVC:

<table>
<thead>
<tr>
<th></th>
<th>CV.CV 966</th>
<th>CVC.CV 490</th>
<th>CV.CVC 4410</th>
<th>CV.CV 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLVC.CV</td>
<td>185</td>
<td>51</td>
<td>811</td>
<td>398</td>
</tr>
<tr>
<td>CV.CLVC</td>
<td>92</td>
<td>23</td>
<td>242</td>
<td>179</td>
</tr>
</tbody>
</table>

Table 1. Frequency of complex onsets in morphs of comparable structure, in Panoria (1990); (χ² = 51 13, p < .001) from Clynes (1995).

A second type of evidence that these structures are dispreferred comes from reduplication: complex onsets found in the base are not copied to the reduplicant in Balinese, as the examples in (3) illustrate (cf. McCarthy & Prince 1994); 3a&b illustrate straightforward derivations involving reduplication, 3c illustrates a class of 'inherently reduplicated' lexemes where an otherwise non-occurring monosyllabic base is reduplicated:

(3)  
   a. slampar 'throw' > -se-slampar-an 'throw (vi, DIST)'
   b. blakas 'chopper' > bo-blakas-an 'trenchantly'
   c. cruukuk /REDcruk/ 'kind of bird'

Where morphemes consist of a reduplicated C₁LVC₂ sequence (3c), the expected L-segment in the medial onset is always missing: cruukuk 'k.o. bird' (*cruukuk, *cuckruk). Overall, then, evidence from both (i) relative frequency in the lexicon and (ii) two distinct reduplication processes indicates that complex onsets are disfavored in Balinese, and least favoured of all where they occur morpheme-medially.

Statistical evidence of the correlation of such marked structures with specific expressive meanings was provided as follows (see Clynes 1995 for a fuller discussion). Samples of morphemes containing suspect structures, as well as a control sample, were examined for the presence of the following semantic types, often said to be associated with expressive lexis (Uhlenbeck 1950, Fudge 1970, papers in Hinton et al 1994):

(4) Diagnostic expressive semantic types:

- **SENSE IMPRESSIONS**: any morpheme which lexicalizes impressions of sound ("onomatopoeics"), sight, touch, taste or smell. (e.g. in English "smooth", "rough", "sweet", "sour", "bright", "dull" "dazzle")
• MOVEMENT VERBS: morphemes which lexicalize movements of the body, and of body parts, such as (in English) skin, shuffle, twitch, limp and so on. Also movements of other animate & inanimate entities e.g. trickle, shoot (i.e. move quickly e.g. of a comet) [actually a subset of the SENSE IMPRESSION class]

• FEELING/EMOTION: morphemes lexicalizing FEELINGS and emotions (e.g. greed(y), love, hate, boredom, boring, curious, curiosity) [also in the SENSE IMPRESSION class]

• BAD: morphemes (i) with pejorative value (cruel, nasty, showoff), or (ii) which refer to undesirable things (e.g. evil spirit) or undesirable states, either mental, (e.g. crazy), bodily (headache, smallpox), or atmospheric (flood, earthquake).

Note that these meanings are used here (and in Clynes 1995) purely as a practical diagnostic tool: they are not claimed to represent either semantic primitives (though see Wierzbicka 1996 on bad and feel as semantic primitives), nor grammaticalized subclasses within the lexicon. (Another functional class associating strongly crosslinguistically with aberrant or exceptional phonological structures is that of loanwords. I discuss reasons for grouping them with expressive lexis in Footnote 3 below; this approach is important to the discussion of Itô & Mester’s approach in §3. I stress that loanwords are not included in the statistical counts now discussed.)

A volunteer who had no knowledge of the hypothesis being tested was given a list of just the meanings (and not the associated phonological structures) of a random sample of 175 morphemes of shape (σ).σ.CLVC, as well as 175 from a separate ‘control’ group of morphemes, chosen as having the most regular possible phonological structure in Balinese; in both cases Pantia 1990 was the source of data. The volunteer then classified the meanings of the two samples, either into one of the four types in (4) above, or into another class, ‘not one of the above meanings’. These results are summarised in Table 2, where column 2 gives the total number of meanings classified into one of the four diagnostic classes (here designated as ‘expressive’), for each group, and column 3 the total number meanings classified as ‘other’:

<table>
<thead>
<tr>
<th></th>
<th>‘expressive’ meanings</th>
<th>‘other’ meanings</th>
</tr>
</thead>
<tbody>
<tr>
<td>(σ).σ.CLVC sample</td>
<td>65%</td>
<td>35%</td>
</tr>
<tr>
<td>‘unmarked’ sample</td>
<td>37%</td>
<td>63%</td>
</tr>
</tbody>
</table>

Table 2: Classification of meanings of (i) 175 morphemes of shape (σ).σ.CLVC (Row 1) and (ii) 175 morphemes of ‘unmarked’ phonological shape (Row 2). See Appendix 1 for full data & analysis. $\chi^2 = 5.46, p < 0.05$, Median Test

3Crosslinguistically loanwords associate strongly with aberrant or exceptional phonological structures - see for example Chomsky and Halle 1968:373, Itô & Mester 1995a&b, Paradis 1996. It is uncontroversial that affective pragmatic elements are associated with loanword usage, at least in the initial phase of borrowing, when such words are still seen as foreign. Hock & Joseph for example argue that connotations of prestige are one of the principal motivating factors in the adoption of loanwords into a language (see Hock & Joseph 1996:271ff). Some loanwords have other affective associations - either pleasurable (karaoke, tango) or otherwise (voodoo, ebola). I conclude that a great many loanwords first enter the lexicon because of their affective pragmatic/semantic associations. To that extent they minimally share a common prelinguistic affective context with the other semantic types referred to here as ‘expressive’, and so can be plausibly grouped with them.
An appropriate statistical test (the Median Test, cf. Spiegel 1972, Hatch & Lazaraton 1991:271) indicates that the probability of getting the difference in proportions between the two samples in Table 2 in a purely random way is less than one in ten thousand. We thus have good statistical support for a correlation between the otherwise dispreferred phonological structure, and the expressive meanings associating with that structure.

Very similar results are obtained when morphemes containing OCP violations are examined. Many languages disprefer the cooccurrence morpheme-internally of consonants sharing the same place of articulation; these include the related Javanese (Uhlenbeck 1950, Yip 1989), Semitic languages (Greenberg 1950, McCarthy 1994, Frisch, Broe and Pierrehumbert 1997), and English (cf. Fudge 1970, Borowsky 1986, Davis 1990, Clynes 1995). In Balinese, as in Javanese, such sequences are a more-marked structural option. Occasionally they are eliminated from loanwords, viz. kompa ‘pump’ from Dutch pomp, and gumi ‘world’, from Sanskrit bumi, gandela (~jandela) ‘window’ from Portuguese janela, and klana (~clana) ‘trousers’ from Hindi carna. More often, however, these structures are tolerated - particularly where they occur in morphemes with expressive meanings. This gives rise to the following striking example of the productive use of formally dispreferred phonological structures to generate expressive vocabulary.

Statistics presented in Table 3 clearly suggest an avoidance of morpheme shapes where more than one labial, apical stop, laminal (c, j, p or s), or liquid (except, as in Javanese and other related languages, when /l/ precedes /r/, cf Uhlenbeck 1950) cooccur.

<table>
<thead>
<tr>
<th></th>
<th>p</th>
<th>b</th>
<th>t</th>
<th>d</th>
<th>l</th>
<th>r</th>
<th>s</th>
<th>k</th>
<th>g</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>p</td>
<td>1</td>
<td>1</td>
<td>120</td>
<td>36</td>
<td>64</td>
<td>69</td>
<td>76</td>
<td>131</td>
<td>22</td>
<td>144</td>
</tr>
<tr>
<td>b</td>
<td>3</td>
<td>0</td>
<td>105</td>
<td>21</td>
<td>89</td>
<td>64</td>
<td>77</td>
<td>124</td>
<td>58</td>
<td>145</td>
</tr>
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<td>t</td>
<td>21</td>
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<td>17</td>
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<td>59</td>
<td>41</td>
<td>110</td>
<td>138</td>
<td>37</td>
<td>125</td>
</tr>
<tr>
<td>d</td>
<td>12</td>
<td>0</td>
<td>26</td>
<td>1</td>
<td>31</td>
<td>14</td>
<td>15</td>
<td>48</td>
<td>9</td>
<td>55</td>
</tr>
<tr>
<td>l</td>
<td>15</td>
<td>15</td>
<td>78</td>
<td>47</td>
<td>0</td>
<td>100</td>
<td>65</td>
<td>80</td>
<td>48</td>
<td>116</td>
</tr>
<tr>
<td>r</td>
<td>11</td>
<td>10</td>
<td>59</td>
<td>14</td>
<td>4</td>
<td>0</td>
<td>18</td>
<td>58</td>
<td>26</td>
<td>63</td>
</tr>
<tr>
<td>c</td>
<td>9</td>
<td>7</td>
<td>65</td>
<td>10</td>
<td>34</td>
<td>38</td>
<td>17</td>
<td>135</td>
<td>22</td>
<td>122</td>
</tr>
<tr>
<td>j</td>
<td>4</td>
<td>0</td>
<td>45</td>
<td>5</td>
<td>15</td>
<td>28</td>
<td>13</td>
<td>29</td>
<td>27</td>
<td>59</td>
</tr>
<tr>
<td>s</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>n</td>
<td>51</td>
<td>28</td>
<td>187</td>
<td>52</td>
<td>63</td>
<td>118</td>
<td>7</td>
<td>97</td>
<td>52</td>
<td>176</td>
</tr>
<tr>
<td>k</td>
<td>33</td>
<td>27</td>
<td>167</td>
<td>66</td>
<td>68</td>
<td>100</td>
<td>116</td>
<td>192</td>
<td>42</td>
<td>243</td>
</tr>
<tr>
<td>g</td>
<td>22</td>
<td>3</td>
<td>101</td>
<td>6</td>
<td>64</td>
<td>89</td>
<td>66</td>
<td>93</td>
<td>80</td>
<td>188</td>
</tr>
</tbody>
</table>

Table 3. Numbers of morphemes of structure /#C...C#/ in Panitia 1990 (column=Initial C, row=Final C). The boxed areas contain homorganic combinations. /s/ is the only laminal to occur morpheme-finally.
There are in general low numbers of morphemes with such shapes, particularly so where the initial and final segments are identical: /p... ...p/, /b... ...b/, and so on. However, those statistics also suggest that stop consonants belonging to the remaining place category, dorsal, can cooccur freely. In fact there are more morphemes with dorsals in both initial and final positions, than morphemes with any other place-place combination. It turns out, however, that morphemes with both initial and final dorsal consonants are almost exclusively classifiable as expressives. A representative sample of morphemes of shape /k... ... k/, with their meaning types, is given in (5).^4

(5) 

<table>
<thead>
<tr>
<th>Word</th>
<th>Meaning</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>kagyek</td>
<td>'momentarily brought to a stop'</td>
<td>MOVEMENT</td>
</tr>
<tr>
<td>kaaak</td>
<td>'sound of someone bringing up phlegm'</td>
<td>SOUND</td>
</tr>
<tr>
<td>kacnak</td>
<td>'in a mess, scattered all over the place'</td>
<td>BAD</td>
</tr>
<tr>
<td>kacwak</td>
<td>'cockroach'</td>
<td>ANIMAL*</td>
</tr>
<tr>
<td>kacek</td>
<td>'not enough (counted wrongly, of money)'</td>
<td>BAD</td>
</tr>
<tr>
<td>kadenklok</td>
<td>'trip up because foot caught'</td>
<td>BAD, MOVEMENT</td>
</tr>
<tr>
<td>kagek</td>
<td>'suddenly come to an abrupt stop'</td>
<td>MOVEMENT</td>
</tr>
<tr>
<td>kagok</td>
<td>'speechless &amp; unable to reply'</td>
<td>BAD</td>
</tr>
<tr>
<td>kaikik</td>
<td>'kind of banana'</td>
<td>PLANT*</td>
</tr>
<tr>
<td>kakak</td>
<td>'laugh loudly'</td>
<td>SOUND</td>
</tr>
</tbody>
</table>

Table 4 compares classifications of the meanings of a sample of 125 morphemes of shape /k... ... k/, with those of the control group:

<table>
<thead>
<tr>
<th></th>
<th>'expressive'</th>
<th>'other'</th>
</tr>
</thead>
<tbody>
<tr>
<td>/k... ... k/ sample</td>
<td>62.4%</td>
<td>37.6%</td>
</tr>
<tr>
<td>'unmarked' sample</td>
<td>37%</td>
<td>63%</td>
</tr>
</tbody>
</table>

Table 4: Classification of meanings of (i) 125 morphemes of shape /k... ... k/ (Row 1) and (ii) of 175 morphemes of 'unmarked' phonological shape (Row 2). Z = 4.48, p < .0001.

Again morphemes with the marked (/k... ... k/) structure associate with a far higher proportion of the diagnostic 'expressive' meanings than those in the control sample. The Median Test again indicates an extremely low possibility that this could be due to random effects. The conclusion seems inescapable that this formally less-than-well-formed structure, like a variety of other such structures in Balinese (Clynes 1995) is preferred in the coining of expressive lexis. Further cross-linguistic evidence of the correlation argued for here is provided for example by Uhlenbeck 1950 (for Javanese), Fudge 1970 (English, etc), Hinton et al (North American, African languages), and Kluver 1998 (Kambera and other Austronesian languages).

^4 Note that this sample includes two names of Plants and Animals, semantic types also commonly associating with 'marked' phonological structures see Trubetzkoy 1939, Uhlenbeck 1950, Hinton et al 1994. These types were not included in the statistical testing. For some evidence that these behave as expressives in linguistic patterning see the handout for this conference paper, available from me directly at aclynes@fass.ubd.edu.bn. Some nonlinguistic evidence is discussed in Clynes 1998.
§2 ACCOUNTING FOR THE CORRELATION. In this section I will first discuss the Foregrounding hypothesis, Klamer's (1998) account of it (though she does not use that term) in terms of iconicity, and then propose an alternative model.

The claim that unusual or marked structures correlate with expressive semantics is a very old one. It is at the heart of the Foregrounding hypothesis, as developed by Prague School writers (for example Mukarovsky 1964 [1932] and Jakobson 1965) out of earlier ideas of the Russian Formalist school of literary analysis (Shklovsky's 'esprangement', cited in Van Peer 1994). Foregrounding was said to involve 'the aesthetically intentional distortion of linguistic components' (Mukarovsky 1964:23). Poetic licence effects thus exemplify one of the principle Foregrounding strategies, 'deviation', or the deliberate violation of linguistic norms for pragmatic effect (Leech 1966, Van Peer 1994). However, Foregrounding is not a characteristic exclusive to literary texts.

Mukarovsky recognized that it was common in journalism, and its use has since been identified in many other discourse and grammatical contexts (Jakobson 1965, Fowler 1981, 1986, Cook 1994, Van Peer 1994. See the Appendix below for exemplification from a variety of linguistic levels.). The correlations between marked phonological shape and expressive semantics demonstrated above (and for example by Fudge 1970, Clynes 1995, Klamer 1998) are thus predicted to occur by the Foregrounding hypothesis.

The Foregrounding hypothesis however is not in itself an explanation, but rather a statement of a correlation, one which invites an explanation. A partial account of why Foregrounding occurs has been offered by some of the above authors. In particular two characteristics of marked structures (in a Praguiian sense) have been proposed which help explain why they are sometimes preferred ahead of more-wellformed ones. These are given in (6) and (7) (except as indicated, the wording and the terms 'Heightened Salience' and 'Potential for Interpretation' are mine):

(6) *Heightened Salience*: a more-marked structure occurring where a less-marked one is available is perceptually more salient than the less-marked alternative. [cf Mukarovsky 1932/1964, Leech 1966]

(7) *Potential for Interpretation*: A more-marked structure occurring where a less-marked one is available 'invites [interpretation]' (Fowler 1986:73).

We thus notice more-marked structures more readily than less-marked ones (Heightened Salience), and where they are used, we seek to make sense of that use (Potential for Interpretation). Heightened Salience appears well motivated as a manifestation of basic cognitive principles. Some have for example seen the Praguiian marked-unmarked dichotomy as one manifestation of a more basic opposition, such as the Figure-Ground of Gestalt psychology. Leech (1966) draws parallels between Foregrounding processes and the Figure-Ground notions. Assuming that such connections are wellfounded, and that linguistic patterning is in part 'driven' by such more basic cognitive factors, (6) in itself brings no added baggage to a theory of linguistics. 'Potential for Interpretation' (7) too appears to be plausible and in harmony with (and ultimately motivating?) pragmatic principles such as Grice's Maxim of Manner (1975). Nonetheless a problem remains: why should the natural interpretation of the use of more-marked structures be
that an expressive semantic/pragmatic element is intended? The same objection applies to a modified version of (7), such as (8):

(8) Potential for Interpretation (revised): A more-marked structure occurring where a less-marked one is available ‘invites’ an expressive interpretation.

One account which might explain (8) is offered by Klamer 1998, who suggests that the correlation between dispreferred phonological structures and expressive semantics is iconically motivated, in the sense of Pierce’s diagrammatic iconicity (see Jakobson 1965, Haiman 1994). Klamer argues that dispreferred phonological structures and expressive lexis are both perceived to be ‘peripheral’ with respect to (respectively) the rest of the phonology and the rest of the lexicon (cf. Ullrich 1990 and Ito & Mester 1995a&b for related views). This common feature of peripherality then motivates a natural association of the two elements: peripheral phonological structures are selected to give form to peripheral semantic structures.

(9)

\[
\begin{array}{c}
\text{central} \\
\text{phonological} \\
\text{structures} \\
\ldots \\
\text{peripheral} \\
\text{phonological} \\
\text{structures} \\
\end{array}
\lll\text{association}\llr
\begin{array}{c}
\text{central semantic} \\
\text{types} \\
\ldots \\
\text{peripheral} \\
\text{semantic types} \\
\end{array}
\]

Klamer’s proposal is however problematic: it is unclear why the kinds of meanings listed in (4) should be perceived as semantically ‘peripheral’, indeed it is unclear how the centre-periphery metaphor applies to semantic elements. The objection remains even if we replace ‘peripheral’ with, say, ‘exceptional’: while the phonological structures are clearly so, in what way are the diagnostic meanings ‘exceptional’ meanings? This version of diagrammatic iconicity is then insufficiently elaborated: it requires a bipartite division of meanings stored in the lexicon, but does not offer independent evidence for that division (as opposed to any other of the infinite number of possible ways of thus dividing up the lexicon).

Moreover, it is too limited in that it refers exclusively to linguistic elements, when foregrounding effects also apply in a variety of paralinguistic and non-linguistic semiotic contexts: e.g., the use of italic and other marked fonts and graphemes to convey expressive meanings (see Appendix), and the attention-getting use of striking visual or aural elements in advertising (Jakobson 1960, Fowler 1981, 1986, Cook 1994). Indeed, the use of marked physiological signals is basic to the prelinguistic communication of emotions such as aggression, fear and sexual desire, not only in humans but in animals. A satisfactory account will have the potential to explain all such associations.

Still, Klamer’s intuition that foregrounding should be accounted for in terms of iconicism is appealing: such a basic, prelinguistic motivation is needed to account for the recurrent correlation of marked structure and meaning at all levels (cf. Zwicky &
Pullum 1987). This paper agrees then that diagrammatic iconicity does motivate Potential for Interpretation (8), but proposes that, as with the well attested cross-linguistic correlation of the high front vowel with the semantic element 'smallness', the correlation has a physiological, rather than purely linguistic grounding (Difflloth 1994).

Expressive language use conveys information about the feelings of the speaker. At the most prototypical level its use is associated with heightened affective states, such as anger, fear, joy or sexual desire. Such states naturally associate with marked physiological states (or 'structures') such as increased cardiac and respiratory rates, and with biochemical events such as production of adrenaline. Such physiological states differ then in various categorical, quantifiable ways from rest states, those associated with neutral affective states. These very natural associations are diagrammed in (10):

(10)

<table>
<thead>
<tr>
<th>neutral affective states</th>
<th>unmarked physiological states/structures</th>
</tr>
</thead>
<tbody>
<tr>
<td>heightened affective states</td>
<td>marked physiological states/structures</td>
</tr>
</tbody>
</table>

The natural associations in (10) are then exploited and developed in the communication of emotion: neutral affective states co-occur with and so are naturally expressed by unmarked semiotic structure, including linguistic structure. Equally, heightened affective states co-occur with and so are naturally expressed by marked semiotic structure, including linguistic structure; such structures are therefore preferred in the linguistic encoding of emotion or expressivity:

(11)

<table>
<thead>
<tr>
<th>neutral affective states</th>
<th>unmarked structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>heightened affective states</td>
<td>marked structure</td>
</tr>
</tbody>
</table>

This physiologically-grounded iconicism thus explains why the use of more-marked structures where less-marked one is available should receive an expressive interpretation (cf (8)). We have then not only a primary motivation for Foregrounding effects in linguistic communication, but also for parallel effects found in the prelinguistic communication of emotions, in both humans and animals.

3. ALTERNATIVE ACCOUNTS. Here I will briefly sketch some alternatives to the account presented above, and show that minimally they all require augmentation by a principle
or principles motivated the licensing of exceptional structure such as those discussed above.

3.1 SUBGRAMMARS. One approach to accounting for departures from wellformedness patterns holding generally in the grammar, has been to assume the existence of subgrammars applying to just one subset or 'stratum' of the lexicon. This approach is found in some analyses in the Optimality Theory framework (Prince & Smolensky 1993), such as Itô & Mester's accounts of various lexical phenomena in Japanese (1995a,b). They suggest that the lexicon of Japanese is subdivided into various lexical strata, each of which constitutes 'a genuine morphological class [...] which can be referred to as such in the grammar (1995b:185)'. Five such putative strata are discussed: the canonically wellformed Yamato lexis (consisting mainly of native items), plus four strata allowing a range of structures not found in the Yamato stratum: the Sino-Japanese stratum (loanwords), the large Mimetic stratum (expressives), the Foreign stratum (partly assimilated loanwords) and the Unassimilated Foreign/ Alien stratum (loanwords plus some native expressives - swearwords, exclamations, and lexicalized casual speech forms). As in Balinese and English, then, morphemes associating with phonological structures not tolerated in the core native lexis are generically either expressives or loanwords.

Itô & Mester assume the standard OT assumption of a single Constraint ranking across the grammar with the exception that the ranking of the class of Faithfulness constraints with respect to other constraints is not constant, but rather varies with different strata. The general principal is illustrated in (12):

(12)

- Yamato lexis
- Sino-Japanese loans
- Mimetics
- Foreign

C1 >> C2 >> C3 >> C4 >> FAITH
C1 >> C2 >> C3 >> FAITH >> C4
C1 >> C2 >> FAITH >> C3 >> C4
C1 >> FAITH >> C2 >> C3 >> C4

In strata where Faithfulness constraints are low-ranked, such as the Yamato lexis, underlying structures violating relatively higher ranked constraints (say, C2 to C4 in (12) cannot surface. However in strata such as the Foreign stratum, a variety of structures violating those constraints surfaces, the now more-highly-ranked Faithfulness constraints imposing their emergence.

Using this approach, the occurrence in Balinese of otherwise disfavored structures such as the morpheme-medial complex onsets discussed in §1 is explained as follows. In a subgrammar 'A' encompassing the major part of the lexicon such structures could never surface, even if they were to occur underlingly, since they would be blocked by the constraint ranking *σ.CLV >> FAITH (where *σ.CLV is a shorthand for the complex of constraints blocking such structures; see Golston 1996 for one more detailed analysis). Morphemes containing σ.CLV sequences could however surface in a Subgrammar B, where the reverse constraint ranking, FAITH >> *σ.CLV, obtained.

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3Itô, Ogura and Zoll (1996), as well as Itô & Mester 1995, do provide surveys of previous work assuming subgrammars, 'cophonologies' (IO&Z) or 'stratification of the lexicon' (I&M).
The account offered by Itô and Mester appears to be very constrained, with a single constraint hierarchy apparently prevailing throughout the lexicon, and with generally only Faithfulness constraints rerankable. It nonetheless has several major problems. Firstly, and fundamentally, it fails descriptively, in that there are many surface counter-examples to the structural types predicted to occur by Itô & Mester's model. From the examination of such exceptional data Rice (1997) concludes that the phonological evidence for the lexical stratification is not strong.5

Three further major failings of the subgrammar hypothesis from the point of view of the present study are that (i) the correlation between marginal phonological structure and the expressive (Mimetic) and loanword types both in Japanese and crosslinguistically is neither predicted nor addressed (ii) more generally, the correlation of marked structure with expressive usages at other levels, linguistic and otherwise (cf Appendix), is not addressed (iii) the approach is stipulative, in that it does not explain why stratum-specific reranking of constraints should occur. The sub-grammar approach needs to be augmented with principles such as those proposed in §2, in order to eliminate these latter three problems at least.7

3.2 Lexical Prespecification. As an alternative to the subgrammar approach, Inkelas, Orgun & Zoll (1996 and earlier versions, 1997) and Rice (1997) argue for lexical prespecification - that morphemes which violate constraints posited to hold elsewhere in the lexicon are individually prespecified in their underlying representations for the relevant phonological structures, with highly ranked faithfulness constraints again imposing the exceptional structures. Inkelas, Orgun & Zoll 1997 argue that prespecification has advantages over a subgrammar analysis, including enabling a single constraint ranking throughout the lexicon, rather than an excessive proliferation of subgrammars. This claim is however still vulnerable to a charge levelled at the subgrammar approach, that it runs counter to the spirit of OT in allowing apparently unconstrained (if now lexically specified) reranking of Faithfulness constraints: the ideal of a single constraint ranking throughout the lexicon is not fully realised.

5And despite the strong claim that 'in a substantial class of cases, constraint reranking can be limited to a reranking of Faithfulness constraints, within an otherwise invariant ordering of constraints' (1995b:206) at least two other constraint classes must be reranked: (i) the class of Alignment constraints must be reranked to account for unusual structural features of the extensive (and semantically expressive) Mimetic lexis, (1995b:190), and (ii) 'correspondence-sensitive' constraints must be promoted to explain the behavior of unassimilated loanwords (Itô and Mester 1998). The appeal to a stratified lexicon, plus limited constraint reranking, looks then increasingly ad hoc given the significant numbers of exceptions to Itô and Mester's generalizations, and as the number of constraint classes which must be reranked increases. Reranking of Faithfulness constraints alone would certainly not account for the Balinese data, since many 'more-marked' structures occur where the imposition of Faithfulness constraints cannot be plausibly invoked, such as in the coining of neologisms with marked structures (for example the productive class of Bad Nicknames, see footnote 8), where Faithfulness constraints are not yet relevant, since candidate structures for neologisms have no underlying representation which Faithfulness could impose.

7Inkelas, Orgun & Zoll 1996, 1997 discuss other general theoretical objections to this approach. Most telling perhaps is that the lexical stratification hypothesis is simply too powerful, generating too many subgrammars. They moreover show that information about exceptionality must be specified at the segmental level, rather than that of morpheme or morpheme class.
One prespecification approach which may avoid this charge is that of Golston's Direct OT (1996). In Direct OT 'morphemes are represented by the constraints they violate at surface structure. [...] Most roots and affixes are represented directly by NO[feature] and ALIGN' violations' (Golston 1996:725). The highly marked Balinese pejorative nickname [ʔuʔ?] (which has an otherwise non-occurring initial glottal stop, as well as a OCP violation) can for example be represented as:

\[(\text{13})\]

<table>
<thead>
<tr>
<th>OCP</th>
<th>No[ʔ?]</th>
<th>NoSTOP</th>
<th>NoGLOT</th>
<th>No HI</th>
<th>NoRND</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>R</td>
<td>RR</td>
<td>RR</td>
<td>R</td>
<td>R</td>
</tr>
</tbody>
</table>

where R indicates a 'distinctive constraint violation'. [ʔuʔ?] is then straightforwardly a 'marked' form because its desiderata include distinctive violations of two very highly ranked constraints, OCP and NO[ʔ?].

Amongst the advantages of Direct OT are that it straightforwardly allows a single constraint hierarchy, it avoids a proliferation of diacritic marking, of subgrammars, or of FAITH types (as found for example in Fukazawa et al's 1998 modified sub-grammar approach). Moreover, the Praguian 'marked – unmarked' distinction is retained in this and other prespecification approaches, whereas it is obscured by a subgrammar analysis.

However even Golston's version of prespecification is not without its own problems. Like the alternatives surveyed above, it does not explain interactions of semantics and phonology correlations. As long as it is unmotivated, prespecification like stratification is too powerful. None of the versions of prespecification proposed above explains either why exceptionality prespecification should be available at all, or why specific items come to be treated in different ways by the grammar. In the case of expressives (including loanwords, see Footnote 3) the iconic factors driving Foregrounding outlined in §2 provide such a motivation.

4. CONCLUSIONS. In the introduction it was argued that both nonlinguistic and linguistic factors must be involved in the interaction of marked phonological structure and expressive semantics, exemplified in §1. I then sketched an account of such factors in §2, where it was argued that Foregrounding effects are naturally explained by the Heightened Salience (5) and Potential for (Expressive) Interpretation (8) of marked structures; Potential for Interpretation is in turn motivated by the 'physiologically-grounded' iconic model proposed there. These functional principles, plus iconically-driven licensing of exceptional outputs, provide an important missing element to accounts such as Golston's Direct OT (§3), which enables a formal description of exceptionality effects in the phonology, but does not explain them. How Foregrounding effects in other linguistic and paralinguistic contexts would be treated formally remains

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8Virtually all Balinese are given a 'bad name' (adan jole) as a child; these pejorative nicknames are often 'meaningless' but always phonologically marked, so inelegant if only because of their marked shapes; see Clynes 1995a:48. Bad names are a source of embarrassment as an adult, and are naturally classifiable into the BAD semantic/pragmatic type.
to be described, however functional principles such as those described in §2 above are clearly needed in all such cases.

McCarthy & Prince’s characterise the process of ‘emergence of the unmarked’ as follows:

‘Even in languages where [a constraint] C is crucially dominated [e.g. by Faithfulness constraints, AC] and therefore violated, the effects of C can still be observed under conditions where the dominating constraint is not relevant. Thus, in the language as a whole, C may be roundly violated, but in a particular domain it is obeyed exactly. In that particular domain, the structure unmarked with respect to C emerges, and the structure marked with respect to C is suppressed’ (McCarthy & Prince 1994:333)

Foregrounding effects, which link with formally more-marked structure with expressive semantics, can reasonably be said to manifest the reverse effect, of ‘emergence of the marked’, given that (paraphrasing and modifying the above) that “even in a language where a constraint C is not normally violated, the effects of violation of C can be observed under conditions where violation of that constraint is licensed by other principles [those described in §2 above]. Thus, in the language as a whole, C may be obeyed exactly, but in a particular domain it is roundly violated. In that particular domain, the structure marked with respect to C emerges.” This claim is compatible with either of the formal models (prespecification, subgrammars) described above.

The data examined here are then strong evidence that functional principles not only interact with formal ones in the determination of linguistic outputs (as argued for example in the work of Boersma 1997, Steriade 1993, Flemming 1995, Jun 1995, Kirchner 1998), but that in the right context they can be seen to override concerns of purely formal wellformedness. To that extent Foregrounding effects provide evidence that functional/semantic desiderata outrank purely formal principles in the determination of linguistic outputs. Language is indeed ‘a system where everything “conspires” to convey meaning.’ Wierzbicka (1988:1).

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Appendix
The broader context: other correlations of marked structures and expressive semantics.

Any approach that seeks to explain only correlations of phonology with expressive semantics has a further major shortcoming: those correlations are merely one expression of a phenomenon manifesting itself at all levels of linguistic structure. Expressive semantic features regularly associate with marked structures, not just at the phonological level, but also at the levels of morphology, syntax, discourse, and paralinguistics. In this appendix I illustrate a variety of such effects, which clearly require a common account.

1 EXPRESSIVE MORPHOLOGY. Pullum & Zwicky (1987) describe a variety of aberrant structural features, characteristic crosslinguistically of expressive morphemes (such as diminutives and, in English, ‘whimsical’ affixes of the -er/-ive/-ette type). These include a) ‘promiscuity of input category’, b) ‘promiscuity of input base’, and c) ‘alternative outputs’.

‘Promiscuity of input category’, refers to the unusual ability of expressive morphemes to combine freely with bases of virtually any lexical category: thus ‘expletive infixes’ in
English can irrupt variously into nouns (*kanga-bloody-roo*), adjectives (*fan-friggin-tastic*), verbs (*e-friggin-vaporate*), adverbs (*abso-bleeding-lutely*) and interjections (*halle-bloody-huh, ho-bloody-hn*), and always of course for locution or other expressive effects.

'Promiscuity of input base' allows morphemes used expressively to combine not merely with other simple morphemes, but with more complex units such complex proper nouns (*Andy friggin' Williams, West friggin' Virginia*), other compounds (*phantom friggin army, rail bloody way*), and longer lexicalized expressions (*hopping goddam mad, fat frigging chance*). Expressive morphology also often produces 'alternative outputs': e.g. both *Kalagoddum-mazoo* and *Kalama-goddam-zoo* are accepted by many speakers, whereas plain derivational morphology allows only a single possible output. Descriptions of comparable phenomena in other languages are found for example in Uhlenbeck (1971), Stump (1993), and Bauer (1998).

2 EXPRESSIVE SYNTAX. Marked syntactic constructions also correlate with expressive semantics. In English, for example, all predicates must contain a verb phrase — except in a few highly expressive 'exclamatory' constructions, where certain nominal predicates are permitted:

(1) a. You rat! / angel! / (*person! / ??linguist!)
   b. Semantics schemantical!
   c. A semantic account, my eye!

Exclamatory particles used as single word utterances constitute no doubt the most marked syntactic 'structure', to the extent that they are generally treated as paralinguistic elements. They are almost always pragmatically charged: *Hallelujah! Shit! Hooray! Ouch!... Often they are phonologically exceptional as well: *Shh(!)? Huh? Psst! Phew! Brrr! Yeeshh! Oh-oh!*

The mismatch between levels involved in exclamative infixing — units which normally function as whole words instead functioning as modifying affixes — has parallel manifestations in syntax, when entire phrases (PP's) can be lexicalized as premodifying elements within noun phrases, but only where they are used for expressive effect (c.f. *the off-the-corner house*). The structure involves some kind of weight violation, with the heavy modifier preceding rather than following the head:

(2) a. an off-the-wall analysis
   b. a totally in-your-face presentation
   c. an over-the-top performance
   d. that out-of-this-world feeling
   e. an out-of-hand rejection

The expletive word class again predictably associates with a variety of unusual structures at the syntactic level. First, expletives again show unusual 'promiscuity' of syntactic

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9 Examples here and below are from McMillan (1980).
10 Zwicky & Pullum (1987:338) suggest that a sequence like *Semantics schemantical* constitutes a single NP. Yet it cannot fill a normal NP slot, and constitutes a complete utterance, with topic-comment like propositional and intonational structure: it is therefore better understood as a kind of aberrant sentence. I assume that like other expletive affixing processes, 'slm-reduplication' does not change word class; *schemantical* is then an NP functioning as predicate: the retained plural suffix is compatible with this view.
combination, occurring for example as modifiers in phrases of a variety of types (3a-d), before interjections (2d), and as VP level modifiers (3e):

(3)  
a. you bloody rat (NP)  
b. bloody fantastic (AdjP)  
c. bloody fantastically (AdvP)  
d. bloody hell!  
e. why don’t you bloody do it!

And only expletives (and one or two other highly affective terms) occur in ‘imprecations’ (4a); verbs of other semantic types cannot occur in this structure (4b):

(4)  
a. Stuff/Bugger/Frig (...) Bless you!  
b. *Hit you! *Ruin you! *Praise you! *Congratulate you!

Thirdly, and paralleling expletive infixing, expletives alone occur in various otherwise untolerated irreps and excrescences (to use the terminology of McMillan 1980) at the phrase (5a-b) and clause (5c-d) levels:

(5)  
a. hurry friggin (*right) up  
b. Get the hell/fuck/*place out of here!  
c. Where the hell/fuck/*place are my glasses?  
d. Who the hell/fuck/*person/*name is he?

3 EXPRESSIVE DISCOURSE. Particular discourse genres in themselves license the use of marked structures. The best known example of this is in literary language, where “poetic license” effects exploit a wide variety of marked structures and marked semantic juxtapositions. Thus in 6a, from Gerard Manley Hopkins’ Windhover, the position of the adverbial NP, apart from creating processing difficulties for the reader, would be close to ungrammatical in other discourse types, as is 6b. And semantically, ‘morning’s minion’, like all metaphor, is incoherent if taken literally (Leech 1966), c.f. 6c.

(6)  
a. I saw this morning morning’s minion  
b. *I read this morning the newspaper.  
c. *I read this morning morning’s newspaper

Elsewhere Manley Hopkins systematically uses a wide range of deliberate violations, such as the (non-expletive) infixing in wind-lilylocked-laced (Harry Ploughman, cited in McMillan 1980). Such violations are typical of literature, though parallel uses of marked structures occur in a variety of other discourse contexts, such as jokes, advertising and journalfish (Fowler 1981, 1986, Guy 1994).

4 EXPRESSIVE PARALINGUISTIC EFFECTS. In paralinguistic contexts too a variety of marked usages signal expressive functions: emotion is signaled for example by the use of fluctuations in voice pitch and quality, as well as fluctuations in volume and speed of utterance. In written texts, contextually unexpected alliterations have parallel functions; italic fonts and SMALL CAPITALS, for example, are used to give salience to text, to signal ‘strange’ or unassimilated loanwords, and to flag the use of onomatopoeia (c.f. the SENSE semantic type), swear words (c.f. the BAD type) and other exclamatory usages: all functions associated with marked structures at other levels of linguistic organization. The parallels between the uses of marked alliterations and those of marked phonological structures are particularly close.