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Dual Laws in (no) Time

Summary

Often, what implicational universals prescribe or proscribe is exactly what will or will not result from lawful change. As mere restatements of what is accounted for by universals of change anyhow, such implicational universals, formulated achronically and intended as constraints on change, are redundant. On the other hand, there are achronic constraints that cannot plausibly be reduced to diachronic ones. Universals about the dual number serve to illustrate how responsibility can be distributed between timeless laws and laws of change.

1. Chronically loose talk

Suppose that crosslinguistic diversity is found to be limited insofar as whenever a language has property p it will also have the logically independent property q. This means that, as languages have developed in time, they have not exceeded the limits defined by this implication: no known language has acquired property p without also acquiring q, nor has any known language lost property q but retained p. On the assumption that there really are such principled limits to how languages can differ, this raises a general question of responsibility: Do timeless laws, by imposing limits on variation, constrain change, or is limited variation itself merely the product of lawful change? Or, in other words: Are linguistic laws typological or diachronic?

Over the several centuries that the assumption of limits on variation has been seriously entertained, typology and diachrony have alternatively been held responsible for them. However, considering the significance of the question, surprisingly little attention has been paid to actually arguing one's case one way or another in particular instances of constraints. Having spent several years now on surveying the dual across the languages of the world, we will use this category of number to illustrate what is at issue in attributing responsibility to typology or diachrony.

2. Fatal progress

Of all dual laws on record,[1] the most notorious is diachronic:

(1)   If there is a dual, it will inevitably be lost, and the sooner the further the complexity of a culture is increasing.

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[1] A good address to check for all such matters is the Universals Archive at **http://www.ling.uni-konstanz.de/pages/proj/sprachbau.htm.** Visitors will find guidelines in PLANK & FILIMONOVA (2000). For dual laws in particular see also PLANK (1989, 1997, 2000).

Ultimately, demise is the fate of all morphological categories of all languages, owing to the blind working of phonetic erosion, to the difficulties they pose especially to non-native learners, and to the inclination of forms to be reanalysed as something else, not to mention the eventual discontinuation of languages themselves. So, what is specific to the dual, or perhaps also to other marked categories and to non-basic deictic categories, would be the coupling to cultural progress. For more respectable proponents of this universal, the crucial notion of cultural complexity is a quantifiable technical one, unlike *mentalité primitive* of old (SCHEL-LINGER 1995). Still, on the assumptions, first, that cultures will normally become more rather than less complex in the relevant sense, and second, that morphological categories are transitory, this link between developments of morphology and of culture would seem spurious, and is certainly not causal.

The universal as such, however specific or general its categorial range, is incontrovertibly diachronic. The mechanisms effectuating transitions between having a dual as a grammatical category and no longer having one have only been alluded to here (phonetic erosion, learning problem, reanalysis), but there is no question that it states a constraint on what can follow after what in time. Nothing is ruled out at any given point in time: languages may or may not have a dual. As to temporal sequences, nothing about a prior state is ruled out either if a language is lacking a dual: so far as the law goes, it may never have had one. The only claim made pertains to languages having a dual, and it is that at some unspecified later point it will be gone.

There is no complementary universal on record about the innovation of a dual – which is just as well, for there does not seem to be a necessity for languages without a dual to acquire one, sooner or later. Still, as duals are rather widespread, with only few families showing no trace of them, one wonders whether there is nothing lawlike to be said about conducive circumstances and about sources from and mechanisms by which duals can come into being, and also about the time it takes for a dual to appear and to disappear. (If the disappearing takes much longer, this would explain why it is observed more frequently than the appearance of a new dual within any given span of time.)

3. Implied sources

However, virtually all other dual universals on record are ostensibly achronic. Most of them are either about relationships of the dual to something else, typically other categories, or about its extension over sets of words inflecting for number. To first illustrate the former:

(2)   If there is a quattral, then there is also a trial; if there is a trial, then there is also a dual; if there is a dual, then there is also a plural.

(3)   If a dual is limited to nouns, the likelihood of basic word order being SVO decreases, in particular relative to VSO.

Apocryphal like (1), (2) is the second best known dual law, and it is probably valid, at least if read as being about entire languages rather than about individual words (for there are languages where particular words inflect for dual but not for plural). And there is also an explanation for why things are as (2) would have them, for whatever it is worth: more highly marked categories, number and other, imply less marked categories.

Though less well known than (2), and far less plausible on the face of it and with no imme-
diate explanation, (3) is probably also valid (PLANK 2000). In one conspicuous respect, how-
ever, (3) differs from (2): the two logically independent properties which are being implica-
tionally related are radically different in kind. In particular, there is no sense in which they
could be **diachronically** related: a dual limited to nouns cannot turn into a (dis-)preference
for some basic word oder or vice versa. The implicantia and implicata in (2), on the other
hand, bear a family resemblance and could easily be diachronically related, with one num-
ber developing from another number through the reanalysis of the respective forms.

In this respect, (2) is like universal (4), regulating the positions of affixes relative to stems
and itself explainable in terms of a dispreference for discontinuous constituents (see PLANK
1999 for further discussion):

(4)   If there are infixes, then there are also adfixes.

Adfixes (i.e., suffixes or prefixes) and infixes are something that can turn into each other. In
fact the only historical source of infixes appear to be adfixes and the only mechanisms effec-
tuating this metamorphosis appear to be metathesis, optimizing syllable structures, and
entrapment, reanalysing an outer affix as part of the stem. On the plausible assumption that
not all adfixes will get metathesized, the combinations of properties which (4) allows and
bans – neither infixes nor adfixes; infixes and adfixes; adfixes but no infixes; *infixes but no
adfixes – automatically fall out from a diachronic law, rendering an achronic law redundant:

(4')   Infixes can only develop from adfixes, namely by metathesis.

Returning to the dual, is there a chance of (2) being equally redundant, amounting to a
mere restatement of the results of lawful change? On the model of (4)/(4'), the implicantia
would have to be seen as lawfully developing from the corresponding implicata:

(2')   Quattrals can only develop from trials, trials only from duals, duals only from plurals.

Now, while (2) seems valid, (2') is clearly at odds with reality. It is of course possible for one
number to turn into another by a change of meaning of the respective forms (what is less
plausible here than in the case of adfixes is that some forms with the old meaning will hang
on), but what (2') is getting plainly wrong is the direction. Quattrals (of which there are not
many, if any) never develop from trials, trials (apparently) never from duals, duals very rarely
from plurals (if at all: it is at best 1st person inclusive dual pronouns which have plural
sources, but their status as true duals is not beyond doubt; see Section 4). But if quattrals,
trials, and duals develop into another number (ignoring whatever else they may develop
into), then it is into a plural or a paucal, or more rarely also a singular. Especially for surviv-
ing dual forms, of pronouns or nouns, which now have plural meaning one need not look far:
they are currently en vogue in Bavaria no less than in Iceland and Malta.

There is thus no guarantee that an achronic implication can be converted into a diachronic
one on the model of (4)/(4'), with the implicans as the posterior state and the implicatum as
the prior state of a metamorphosis. Number is not the only case where this stratagem fails.
For another example consider the Greenbergian implications (5) (adapted from his Nos. 3
and 4, 1963), which have the order of verbs relative to objects (and subjects) as the implican-
tia and that of adpositions relative to their complements as the implicata:

(5)   If basic order is VSO, then adpositions are (almost) always prepositions.
         If basic order is SOV, then adpositions are (with more than chance frequency) post-
         positions.

There is a possible and indeed plausible diachronic reading hidden here too, insofar as adpo-sition-complement constructions may develop from verb-object constructions by grammati-calization, thus ceteris paribus mirroring the order in the source construction. Again, unlike in (4), 'implies' has to be replaced by 'develops into' rather than by 'develops from'.

If (2) is claimed for diachrony on a similar logic, with the original implicantia as sources and with the original ultimate implicatum as the prime target of semantic changes, as in (2"), this may be empirically adequate as far as possible change goes.

(2")   If quattral, trial, or dual forms are reanalysed as other numbers, it will normally be as plurals or paucals or rarely also as singulars, and never the other way around.

However, what (2") does not do – unlike (4') in relation to (4) – is to render (2) redundant: noth-ing or at most little follows from this diachronic universal about possible inventories of numbers, which is what (2) is about, declaring exactly eleven inventories unlawful (*only quattral; *only trial; *only dual; *only quattral and trial; *only quattral and dual; *only quattral and plural; *only trial and dual; *only trial and plural; *only quattral, trial, and dual; *only quattral, trial, and plural; *only quattral, dual, and plural – always plus singular). While not really ruling out any of these inventories, what (2") does single out as a preferred inventory is that with only a plural/paucal and a singular, which is what semantic change is bound to lead to, provided there is any and provided the old quattral, trial, and dual meanings will not find themselves new forms.

Looked at more closely, (2") is not a particularly comprehensive and forceful law of change. It does not say that quattrals, trials, and duals are the only sources of plurals or pau-cals; it does not say that semantic change is the only mechanism for obtaining plurals or pau-cals; and it is silent about alternative sources and mechanisms; also, it says nothing about the hows and the wherefroms of these other non-singular numbers themselves.

These limitations suggest that there might perhaps be another logic by which (2) could be claimed for diachrony. Timelessly valid constraints on inventories would fall out from con-straints with a time dimension, consisting in the requirement that either innovations or losses of individual numbers be successive or simultaneous:

(2"')   A quattral can only be innovated if there is a trial;
a trial can only be innovated if there is a dual;
a dual can only be innovated if there is a plural.

(2"")   A plural can only be lost if there is no dual;
a dual only be lost if there is no trial;
a trial can only be lost if there is no quattral.

The primary mechanism for innovations is certainly the grammaticalization of correspond-ing numerals or quantifiers (such as 'both'); others are the reanalysis of other morphology or borrowing. Loss can happen through the plain giving up of forms, through their phonetic erosion, or through their reanalysis as something else.

Empirically, either (2"') or (2"") would constrain variation in inventories exactly as (2) does. And the explanatory principle, tried but not always trusted, would presumably be the same, too: markedness. But then, in effect, it makes no real difference which way to put it. The diachronic renderings add little substance to (2), for it is true for **any** achronic implica-tion about properties which are not themselves universal, and which therefore are not per-force present in each language at all times, that where they exist, they will have been inno-vated and not yet been lost. Perhaps the only question of substance is whether what is being constrained is the innovation or the loss or both.

4. Extended extents

The other major kind of achronic dual laws are about the extension of the dual over word-classes, as in (6), or over subsets of words within word-classes, such as individual persons of personal pronouns, as in (7).

(6)   If the dual extends to nouns, it also extends to personal pronouns.

(7)   If only one person differentiates a dual, it will very likely be the 1st rather than the 2nd or 3rd.

Another apocryphal universal, (6) only holds with more than chance frequency; its occasional violations, especially in Semitic, have been well known since HUMBOLDT. Moreover, nominal duals unaccompanied by duals in personal pronouns (or elsewhere) tend to be limited to subsets of nouns or only to be put to special uses (such as elliptic or kinship duals).

The achronic universal (6) is another case where a diachronic connection can naturally be construed between the implicans and the implicatum as source, giving this version:

(6')   A nominal dual can only develop from a pronominal dual.

Possible mechanisms for transferring a pronominal dual to nouns are (i) the use of entire 3rd person pronouns, including their own number marking, for the number marking of nouns, and (ii) the analogical extension of pronominal number marking to nouns. Thus, nouns could never have a dual unless there was one on pronouns, where they had obtained it from. In both scenarios, pronouns themselves would retain their dual and other number marking. Thus, lawful change would produce exactly those dual extensions which conform to (6): neither pronominal nor nominal dual; only pronominal dual; *only nominal dual; both pronominal and nominal dual. Again, an achronic universal would be rendered redundant by a diachronic one – if this were valid.

But, taken literally, (6') is not a universal, not even a statistical one, because it only tells part of the story of how duals come into being. The by far most frequent source of duals is the numeral 'two', in grammaticalized construction with nouns as well as pronouns. This does not, on the face of it, give pronouns an edge over nouns as the preferred carriers of duals. However, when a further factor relevant to grammaticalization is taken into account, the strong dispreference for duals on nouns only begins to make diachronic sense, too. One would expect a general suffixing preference to play a role here, as with other morphological categories: accordingly, turning the numeral 'two' into a dual affix should be easier if it is postposed, giving a suffix. Thus, with all possible orderings of the numeral relative to its noun or pronouns as starting points for affixation, these are the outcomes:

(8)   word order   ease of affixation   result
      a.   Num N   no   Num N
            Pro Num   yes   PRO-DUAL
      b.   Num N   no   Num N
            Num Pro   no   Num Pro
      c.   N Num   yes   N-DUAL
            Pro Num   yes   PRO-DUAL
      d.   N Num   yes   N-DUAL
            Num Pro   no   Num Pro

Now, the result in (8d) is outlawed by (6): *dual on nouns but not on pronouns. As it happens, the orderings which are the only possible point of departure in this scenario are exceedingly rare: pronouns resist being preceded by numerals in basic syntactic constructions. On this further premise, itself presumably an achronic law of sorts, we have another component to an overall diachronic law regulating dual extensions, wresting responsibility from the achronic universal (6).

Overall, and not without exceptions, the extensions of duals tend to be in accordance with the hierarchy in (9), with pronouns ranking above nouns, with 1st person over 2nd over 3rd, with inclusive over exclusive, and with four possible rankings of semantic subclasses of nouns.

(9)   Hierarchy of Dualworthiness

1st		2nd	3rd	Nouns	
Inclusive	Exclusive			Animate	Inanimate
				Natural Pairs	others
				Non-Pairs	others
				Measures	others

Duals tend to extend from left to right on this hierarchy, and to cover contiguous stretches. Now, while some diachronic sense could be made of the pronominal preference, as decreed achronically in (6), the preference for 1st person, as per (7), is not easily translatable into a law of diachronic spreading, other than in the not very meaningful manner of (2''')/(2''''):

(7')   Only 1st person pronouns can innovate a dual without 2nd and 3rd person also doing so.

(7'')   1st person pronouns can lose the dual only if 2nd and 3rd person have done so, too.

There is a diachronic scenario which helps to understand the 1st person preference, although it cannot aspire to lawhood. As already alluded to in Section 3, 1st person plural inclusive pronouns are prone to be reinterpreted as (preferably inclusive) duals, since they typically refer to the speaker and just one adressee – which leads straight to pronominal systems having a dual only in 1st person. However, since this is not the only mechanism for creating pronominal duals, 1st person and other, (7) is by no means explained away diachronically. Moreover, it is not beyond doubt that 1st person inclusive duals are genuine duals in the first place. As has been argued among others by Greenberg (1988), when unaccompanied by duals on other pronouns, forms for the dyad of speaker and one addressee are better conceived of in terms of an extra category of person rather than of (dual) number.

5. Chronically loose think

The temporal nature of constraints distinguished as achronic and diachronic is in danger of being obscured by common ways of talking or indeed thinking about linguistic change. Therefore, a few final remarks are in order to at least hint at how we think it ought to be conceived of.

It is of course only a manner of speaking to say that languages, or their properties, change in time: languages are not individuals possessing temporal (or also spatial) continuity. What really only exists in time (and space, sort of), other than individual speech acts, are repre-

sentations in the minds of speakers, i.e. grammars and lexicons. It is ultimately about these, and their properties, that claims are made when laws of change (or variation) are being posited.

In customary parlance, laws of change are universal generalizations about which particular states of a language can or cannot result from which particular prior states and about the mechanisms potentially effectuating the transitions. Put less metaphorically, diachronic (or simply chronic) laws are ones which force particular grammatical or lexical representations upon learners or more advanced speakers, or put such representations out of their reach, whenever they encounter data of a particular kind, and these data have been produced by previous speakers on the basis of different internal representations. By contrast, when laws are said to be achronic (or panchronic), the proper understanding is that there can never be different representations of the same data. Learners or more advanced speakers abiding by such achronic laws may also need temporal experiences to trigger a representation (if a law is implicational, the implicans will need to be encountered as a trigger of the implicatum); but what is invariable, and in this sense timeless, are the representations which successive generations may form of such data.

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