efficiency: if no argument has a discourse-related priority to be chosen as subject, greater transitivity is achieved by allowing the argument which requires Case to be Case-licensed in SpecIP. This in turn explains why active clauses are considered to be basic in Western languages, while passive is treated as a derived form, whereas ergative clauses are basic in Dyirbal (incidentally the reason why the term 'passive' is not used for such constructions) and anti-passive (which corresponds to, but is never referred to as, 'active') is derived. A correlate of this is that movement which does not obey condition d) is usually reflected in the verb with a more marked form: passive in accusative languages, anti-passive in ergative languages.

This analysis requires a major revision of the sections of GB theory which deal with Case-marking. The relevant points are summarised below:

(a) movement to subject position takes place in order that SpecIP have a referent.
(b) choice of which argument is to move to SpecIP is dictated by discourse.
(c) movement may take place from one Case-position to another.

If we accept points (a) - (c), we have a model of diathetic change which entirely eliminates Burzio's generalisation and which accounts for the differences between subject-focus languages, accusative languages and ergative languages in terms of two parameters.

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Construction as reduction

Christer Johansson

The language acquisition process is suggested to be a process of selection and cumulative reduction from the language of more experienced (i.e. older) individuals. The population structure ensures that the approximation of the language learner results in a common language that is stable under normal conditions. Language is described as a 'stasis' between constructive and eliminative reduction.

Introduction

The language acquisition process is often conceived of as the construction of a mental program for the generation of syntactically correct phrases by some kind of agent – the language learner.

An alternative conception of the acquisition process is to view it as a process of selection from the language, which can be described as setting parameters (cf. Piatelli-Palmarini 1989). The language learner is the selecting environment of the language, in analogy with environmental factors shaping biological life (Dawkins 1976; Johansson 1995b).

An evolutionary process is a selective reduction, in this case from the language as it exists at the time. The language is preserved by human inertia. We tend to do what others do, which is a very good strategy in a complex world of billions of possibilities that can all potentially be actualised. Another feature of such an evolutionary process is that it is accumulative at the same time as it is eliminative (cf. Ramsey 1995). Individuals of a population make reductions from local experience, and can therefore not do exactly the same reductions.

While the language learners are picking up reduced versions of the language, the language is still out there in the rest of the population that has acquired the language. Irrespective of what children (L1 learners) do, in the normal case they will not affect the language because they cannot influence enough people. Adults simply do not regress to childlike language.

L2-learners are, in most historical cases, isolated from the main population socially as well as geographically, which might lead to new local variants. For L2-learners to affect the language of the population they would have to be socially and geographically integrated with the population.

Language as a population process

Language obviously exists in the interaction between individuals within a language-population that shares similar experiences, myths and solutions to everyday problems. The language population is integrated by history, i.e. the accumulation and diffusion of overt (or shared) solutions[1].

It is conceivable that the language population 're-presents' (in the original sense of the word) language in language use (cf. Wittgenstein 1957). Language representation exists in the re-use of existing structures to carry messages just like the sea carries ships.

Presentations are more often re-presented if they have a 'family resemblance' with earlier presentations. Ungrammatical presentations are less common, even if they are part of the possibilities of a language, than grammatical presentations. This is one external representation of language that is both actual and self-maintaining.

Connectionist models, even though they have inherent weaknesses, have actually demonstrated that 'knowledge' can be distributed through an array of similar processes in individual units and the interaction between them (Elman 1993; Johansson 1995a; MacWhinney & Leinbach 1989; Marchman 1992 inter al.; see also Marcus et al. 1992).

The number of possible solutions to almost any problem (even as simple as how to pick up a coffee cup) is typically too large for us to try them all in order to determine which one is the best solution. Experience becomes important because it tells us possible and actual solutions (cf. Nørretranders 1993). It is only the worst solutions that we would need to avoid.

Experience is individual, but a population can be a treasure of experience for us to tap if we have the correct authorisation codes. The association between social positions and mode of expression is one of those authorisation codes (cf. Bourdieu 1991).

Towards a cultural state by imitation

An imitation is a subjective version of a previous situation. A copy makes a claim to be authentic, while an imitation only claims to be familiar. An imitation is necessarily a distortion because it is projected through a different media arising from a different persona and a different situation. Worth noting is that an imitation does not necessarily imply a deeper understanding of the imitated, but rather an understanding of how the imitated is per-

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[1]The word 'solution' is used in a wide sense: e.g. the possible phonological contrasts in a language would be a 'solution', but not to a predefined question.

ceived. As I experience impersonation/imitation, imitation commonly involves an exaggeration of a (characteristic) distinction.

A new-born can instinctively imitate a person's facial expression (Meltzoff & Moore 1977). In Meltzoff & Moores experiment 12–21 day old children imitated, without (much) visual experience of their own appearance, the facial expression of adults without training or feed-back. Imitation is not easier due to it not needing creativity, it is just different than a pure creation, and above all it does not necessarily require feedback if the imitation is stimulated from human activity.

Generally we try to become as those we 'admire', and we would 'admire' those that have progressed (matured) more than we have. Actually, the process of association and dissociation is done for us by the environmental constraints manifested in constraints on the people we will meet for geographical and/or social reasons, as well as for the obvious reason that time is limited.

For children the discrimination is easy to make: those that are older look more physically mature. On average, children spend more time with their care-givers than with most other people, and in those cases the age discrimination is provided by the environment and not by choice.

Adults have more difficulties because social values that are determined by cultural and societal values might dominate over age as a sign of an 'admirable' person worth trying to become alike. Sometimes we are misled be exclusively material signs, like signs of cash in the pocket or how well fed the person looks to be.

However, age would still be a good indicator since an older person has managed to survive and has necessarily found some solutions to human problems. Such solutions might not be the best, but they have actually been tried. It would of course be good to know and avoid mistakes that others have made, but these tend to be less obvious and less publicly presented.

It would be an extraordinarily bad strategy not to do as others. What others have done is at least a possibility that has been tried and shown to work, which cannot be said for hypothetical reasoning. Imitation does not need an understanding of the 'problem', it is enough for the solution to work.

If imitation is applied by most of the population, then it works as a coordinating and conforming factor. There are a million ways to be, but for as long as we imitate only a few ways are actualised. This makes it possible for a population to agree on values that emerge over time.

If a majority of a population follows the simple rule of imitating (and thus re-presenting) older and/or more experienced people, a stable cultural state emerges in the population, especially stable in isolated populations: i.e. populations with a more limited source for variation of imitations.

Culture refer to what people actually do, which is a wider view than the view of culture as refinement, elegance and civilisation being manifested exclusively in rare activities (a rareness that cause a social value) such as ballet, opera or soccer games.

If the cultural state is an emergence of a biological strategy, then it would be affected by changes to the population. Changes or differences in density, age distribution, size, growth and migration rate of a population would lead to different environments for the survival of language as such (Johansson 1996). For example, there are tendencies for isolated populations to have extensive case marking systems (Walsh 1991). This can be a result of a greater possibility of case marking to survive and/or to form under such conditions. The question remains open until we have a reasonable model of population factors.

Forgetting as inherent force

That individuals forget is not a great surprise to us. The possibility that we forget in a similar manner should be conceivable, since we are similar biological and social beings.

The culture in which an utterance is made defines what is predictable, and that can be forgotten (i.e. not overtly presented) either in the actual presentation or in the re-presentation without much loss within the culture.

All parts of language have a period of 'incubation', ranging from minutes (learning of vocabulary elements in one exposure) to years. We seem to be protected from language structures by forgetting. Forgetting reduces the amount of infection. Any overt part of a language can compensate, and add to its survival by having high occurrence, being familiar or concrete, or being more perceptually salient (stressed and/or consisting of salient phonemes e.g. /s/ as in Dawkins' example ...*Britannia rules the waves.*

The actual language is the result of a balance between 'survival of language' and collective tendencies to forget (Johansson 1995c). Notice that it is a balance between extremes: a predictable commonly occurring item will tend to be forgotten by omission by individuals (but not the population), and an unpredictable, low-frequency item would tend to be forgotten by non-representation in the population. This further depends on how long a

presentation takes to diffuse in population. A word can be learned in one exposure without necessary intermediate forms, whereas an extensive but non-distinct case marking system can take several years to acquire, with intermediate systems.

Collective forgetting leads to conformity (cf. Slobin & Bever 1982). We tend towards sameness: we do the same things, and we do them in the same manner. It applies in particular to everyday matters that we do not pay much attention to. This reduction of possibilities is a kind of learning that is not individual.

The population is a collective memory, which is necessarily larger than the experiences of any individual since any individual of a population is part of the population. Individual access to common memory is limited, but more importantly it is not controlled by the individual. The individual cannot know who she will come in contact with, or what experiences those individuals will have.

Reduction is done for us

Reductions *from* a (surrounding) language result in an instantiation of language in an individual. The actual language does not change because *one* individual reduces from it to an instance of his own language, especially not if adaptation is not in the direction towards that individual. The instance of the language is thus smaller than the language[2], but the individual can select more and more of the language, and add to the instance of his own language. Eventually the learner will have a working language and start to re-present the language with his instance of it.

One point is again that reductions are done for us by our environment. Before the child is born, it is embedded in an environment that shapes the frequency distribution of sound, light and temperature. The intonation of the surrounding language is transmitted through the mother from the very formation of the auditory nerve, and correlated with other life functions: the mother's heart-beat, breathing, chemical substances that can reach the child. There is no definite starting point of an individual (or the language of an individual), since experience overlaps with rather than succeeds generations, and the zero state does not exist except hypothetically.

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[2]In the same sense that odd numbers are fewer than numbers.

Analogy as reduction

Analogy formations could be viewed as a process of reduction. Analogy reduces the number of possible distinct forms by eventually eliminating irregularities. If the English *go* should ever have the past tense form *goed* this would be an excellent example, but it is mainly low frequency word types with low token occurrence that undergo elimination in the vocabulary.

Analogy is in conflict with the main process of reduction in language: to imitate what is experienced in the actual language without regard to possible causes. Some languages (like Swedish) can actually get stuck with one irregular and one regular form for most strong verbs due to these conflicting processes (cf. Johansson 1995a).

Eliminative and creative reductions

It should be clear that individual reductions do not necessarily result in a reduction in the language per se. To claim this would be to claim that every individual makes the same reductions.

Reductions result in under- and over-instantiations of understanding in actual communication. Under-instantiation would be when a listener does not understand what the speaker intended, and over-instantiation would be when the listener understands something else than what the speaker intended. Ultimately this is an effect of the fact that information is not transferred but reconstructed. That which the speaker does not share with the listener is eliminated or reduced in strength, and that which the listener does not share with the speaker is often added. Obviously, we have a priori similarities that make our communication special to us, in contrast to communication across species. Culture actualises another layer of similarity.

Reduction requires no agent

Language acquisition is not controlled by will. The L1 learner never has a choice to learn a language or not, it happens by the way our senses select from language experience. The language experience is naturally reduced throughout perceptual, memory and performance maturation.

Childhood is a unique position in life. Firstly there is not much conflicting experience. Secondly the accessible input is appropriately reduced by the developing senses. Thirdly the (subjective) world is smaller for a child who copes with the world that care-givers permit. Lastly, almost everybody else would have more experience than the child, yet still they will be willing to spend time with the child – a truly altruistic act in a cultural perspective.

To view language acquisition as reduction does not need a function of a conscious individual mind (apart from consciousness itself). The relevant aspect of our minds can be transcribed as 'together knowledge'[3] since social interaction is the *media* for emergent common knowledge. If we are not conscious we are 'logged out' from social interaction.

Second language learning: reduction to a reduction?

Late second language learning is made more difficult because it is likely to be a reduction from a reduction (e.g. Japanese) back to the first reduction (e.g. Swedish). In that situation there is a risk that we do not catch necessary parts that cannot be reduced from the reduction that we observe, since both languages are the result of traditions of reductions.

For example, cultural values are translated instead of experienced, situational restrictions are eliminated, and the *result* of the language utterance has become our goal – i.e. we usually have a specific intention in our adult language and we have less time or acceptance for playing games.

True bilinguality is rare, in most cases one language is the dominant.

> "[E]ven though language shift decreases with age in the first generation, it generally increases with age in the second generation. The minority language ceases to have a communicative function when the older generation passes away." (Sirén 1991:43-44)

Bilingual communities sometimes (if not in general) develop interlanguages that are influenced by the surrounding language (Oksaar 1975), which the speakers in turn are aware of, and therefore accommodate according to their simulation of what the listener would prefer. The same phenomenon is easily noticed in Malmö, where it is not uncommon to hear foreign languages (like Turkish or Serbo-Croatian) spoken with Swedish words and phrases conveniently integrated in an utterance (sometimes 'decorated' with some English). There is nothing wrong with that, the point is that the language of the speakers accommodates to their understanding of (i.e. simulation of) the listener's ability to understand (Gordon 1995a, 1995b), and that would reduce the 'candidates' for how to say an utterance.

In early second language acquisition the problem is not as severe. It is likely that the second language should be acquired in parallel with the first if the first language has not yet become the dominant medium of thought. In adult years it is common to confuse thought with language since we express our thoughts even to ourselves in the cloak of language. Language is not

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[3]Literal translation of the Swedish word for consciousness – *medvetande*.

likely to be the dominant or 'automatic' expression of internal thought for the typical first language learner, and therefore there will be little interference (see Logan 1988; Stroop 1935).

The learnability problem

It has earlier been argued that the learnability problem must be resolved by innate language structures and sensitivity to such structures (Pinker 1989; 1994). The problem can be resolved in a slightly more elegant way by a shift in perspective towards a view from language. Structures that cannot be learned simply will not survive long in a population (Johansson 1995b). The *possibility* to have 'structures' *must* still be there from the beginning, but this does not mean that the *structures* themselves are actually there – that would be a far too static view of the development of mind.

The shift of perspective has the advantage that it permits evolutionary/ecological arguments and completely avoids any notion of teleology, which makes it possible to view language formation, diffusion and change as a special (cultural) case of evolutionary-ecological processes. However, to understand individual *use* of language we would need a perspective from the individual.

The population is the environment in which language has to survive, and that language environment is selecting learnable structures (which is a kind of flexible reduction). The whole spectrum of different variations of reduction (cf. Ramsey 1995) is present: reduction by analogy balanced by reduction of the number of relevant dimensions, elimination of structures that *have become un-learnable* in contrast to the actual language at the time, and construction or rather borrowing and accommodation of structures that can fit in with the language as it exists at the time. Together with diffusion effects due to migration and immigration the net sum ought to be an accumulation in the normal case.

It rains

In many modern western languages there is an obligatory subject filler in sentences like *It rains*. Such sentences are absurd if it was true that the subject filler was motivated by the need for an agent/experiencer. The obvious question would be: Who or what is it that rains? It makes more sense to talk about a structural and/or historical accident that has been able to survive by human inertia.

Imagine a language (e.g. Swedish) that was able to keep the distinction several hundred years ago. In this language it was possible to say (the equivalent of) *I run* and several other active agent verb sentences as well as *rains*. The option to exclude the subject filler when it was unnecessary was later lost by reduction of the relevant dimensions of variation.

The conceivable reason is a reduction from the choice of having a subject or not to the obligatory 'always a subject'. Analogy reduces the number of dimensions of variation in the language by reducing the 'free' choice of the individual. Individuals would gladly agree to this reduction, because it means less effort for them to say the unstressed low effort pronoun than to know whether it was needed or not (cf. Zipf 1949).

Swedish frightened children

In Swedish there is a tendency for animate nouns to have the common gender article *en* (*en kvinna* 'a woman', *en man* 'a man', *en katt* 'a cat', *en hund* 'a dog'), but a few exceptions exists that are morphologically neutral *ett* words (*ett lejon* 'a lion', *ett fruntimmer* 'a (sturdy) woman', *ett barn* 'a child'). In *most* cases such words are neutral *ett* words because of a loan from another language in analogy with Swedish morpho-phonology.

For example, *lejon* has morpho-phonologically more in common with berries (*lingon* 'lingon-berry', *hjortron* 'cloud-berry', *smultron* 'wild strawberry', etc.) than with cats. *Fruntimmer* is most likely from the German word *Frauenzimmer* 'women's room' and it has kept a morphology suggestive of a thing (*timmer* 'timber').

The Swedish word for 'child', *barn*, is an *ett* word, since the common term *barn* is generic, i.e. not including the sex of the child. In an older system, the generic of items with a natural sex would have to be neutral since the common gender was split in masculine, and feminine. By accident, it reflects the status of children as assets in an agrarian community, functioning as an old age insurance.

The partition into grammatical genders turns out to have implications for adjectives. A few Swedish adjectives are almost exclusively used with *en* (common gender) head nouns, for example *rädd* 'frightened', *lat* 'lazy'. The *ett* neutral alternations for these two words would be *rätt* and *latt*, respectively (the form *rätt* can have the meaning 'right, correct' and possibly 'at a straight angle' as well). The form *latt* is very rare and to my knowledge cannot have any other meaning than 'lazy'.

There are grammatical gaps in the use of these adjectives and a few others. People can choose to break the convention and use the 'incorrect' form (a) rather than making a substitution of expression (b, c).

(a)   (*/??) Ett rätt barn
       'A frightened child'

(b)   En rädd unge
       'A frightened kid'

(c)   Ett ängsligt / skrämt barn'
       'An anxious / scared child'

(To be *skrämd* implies necessary causation by something or someone, whereas to be *rädd* does not imply any external causation of the mental state – to be frightened without necessary cause.)

It is interesting to see that the problem does not exist in plural (d), so it is not likely to be an exclusively semantic problem.

(d)   Rädda barn
       'Frightened children'

The only thorough paper on the subject is Pettersson 1990. An explanation in line with that outlined by Pettersson is formulated below.

i) The words that are a problem have lost a morpheme boundary, and they are typically monosyllabic, or polysyllabic loan-words with stress on the last syllable.

e.g.   /reːd/   'frightened'   + /t/ neutral 'suffix'   -> /reːt/
      /laːt/   'lazy'   + /t/   -> /laːt/
      /rigiːd/   'rigid'   + /t/   -> /rigiːt/

The derived forms have become potentially new free morphemes, as there is no perceptible morpheme boundary. The morpho-phonological process that produced the new forms ought to be considered independent of *semantic* ties to the root form. There exist dialects where there is no problem since a linking vowel is used between the stem and the neutral suffix. A realisation of *ett räddet barn* would cause no problem among some speakers of Swedish in Finland[4] (dialect in Österbotten).

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[4]According to Johan Dahl, Dept. of Linguistics, Lund University.

ii) According to Pettersson, a *distinction* between internal and external[5] causation is not unusual in the languages of the world. Pettersson cites the productive marking of the distinction in Russian. For example *krasiva/krasivaja* is applicable to girls for the distinction inherently beautiful (internal causation) and externally beautiful – the kind of beauty which is in the eye of the beholder. It is furthermore impossible for nouns like the weather (themes lacking intention) to have short forms (internal causation): *Pogoda chorošaja/plochaja* 'the weather (is) good/bad' only.

Neutral Swedish nouns are usually inanimate, non-living, mindless things, that are not plausible as subjects with inherent causation. However, it is still possible to use internal causation words like *rädd* with common gender words like *stol* 'chair'.

     En rädd stol (!)   'a frightened chair'
but
     *Ett rätt bord   'a frightened table'

The two factors (i) and (ii) together set up a scenario where a free morpheme does not actually occur in the neutral context which has been given to it by the blind morpho-phonological process that created it.

Adjectives involving 'inherent causation' are almost exclusively used with common gender nouns that can be agents, the 'inherent causation' restriction emerges by how the adjective is actually used, i.e. 'inherent causation' does not cause the restriction but is rather an effect of how a potentially free linguistic item is re-presented in a population. (Forms like *skräm+t* and *ängslig+t* are not potentially free morphemes.)

The discussed adjective forms can become ungrammatical if (and only if) the learning process is driven by reduction from (in contrast to hypothesis about) the actual language. In this example, neutral nouns naturally do not co-occur with adjectives of internal causation. Any sensible *hypothesis* would not exclude lions (*lejon*), sturdy women (*fruntimmer*) or children (*barn*) from being individually lazy (*lata*), frightened (*rädda*), and so on.

Conclusion

The language formation process can be viewed as a balance between individual biological possibilities and the cultural actualities that the individual will eventually internalise, and represent within a population. The process

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[5]Internal and external causation are my terms.

behind such language formation has been pointed out to be a process of selection, and reduction. Reduction, in this context, should be interpreted quite widely since in a population individual reduction of dimensions might result in an increase in dimensions in the population due to limitations of diffusion that arise from geographical as well as social isolation.

The appeal of reduction is that we do not in general have to resort to 'cognitive' factors for explanations. The number of assumptions needed in this explanation is thus a lot fewer than in competing explanations. A good example is that the 'learnability' problem can be resolved without ad hoc explanations. This was due to a shift of perspective from the individual language learner towards the survivability of that which evolves (namely the language) in the environment (i.e. the population). Other examples exist that are more readily explained by a general process of reduction, in contrast with ad hoc solutions for individual cases. One example showed how a quite complicated 'morpho-semantic' restriction could emerge from representation at the population level.

Those that necessarily want the complexity back only have to close their eyes and imagine the same scenario from the perspective of an individual.

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Ergative case in the Circassian languages[1]

Mukhadin Kumakhov, Karina Vamling and Zara Kumakhova

The Circassian languages (Northwest Caucasian) exhibit ergative patterns both in case marking and in the alignment of agreement markers in the verb. Ergative/absolutive case marking is restricted to certain types of nominals, which thus results in split-ergativity. The paper examines the marking of ergative/absolutive case in various types of nominals and relates the distribution to the Nominal Hierarchy.

The Circassian languages Adyghe (West Circassian) and Kabardian (East Circassian) belong to the West Caucasian languages. They are spoken by 568.000 in the Caucasus and also by great numbers in Turkey and other neighbouring countries[2].

The problem of ergativity in the Circassian languages is treated in works such as Jakovlev & Ashkhamaf 1941, Rogava & Kerasheva 1966, Taov 1967, Zekokh 1967, Kumakhov 1971, 1989, Gishev 1985, Kumakhov & Vamling to appear.

1. Introduction

The intransitive subject (S) and the direct object (P) are marked by the absolutive case, whereas the transitive subject (A) appears in the ergative case (1-2).

(1)   S'°əzə-r   ma-k'°e-ø
         woman-ABS   S3SG-go-PRS
         'The woman is going'   Adyghe

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[2]The majority of the Circassians were forced by tsarist Russia to leave their historical homelands in the Caucasus at the end of the Great Caucasian war (1817-1864) and settled in Turkey and other countries in the region.