PATTERNS OF LEXICAL SYNAESTHESIA

IN JAPANESE

Deborah Field

Department of Linguistics
Faculty of Arts
Australian National University
PATTERNS OF LEXICAL SYNAESTHESIA

IN JAPANESE

Deborah Field

A Sub-thesis submitted in partial fulfilment of the requirement for the degree of Master of Arts (Linguistics) in the Department of Linguistics, Faculty of Arts, Australian National University, Canberra

March 1990
DECLARATION

This sub-thesis is my own original work. All sources used have been acknowledged.

Deborah Field

March 1990
ACKNOWLEDGEMENTS

I wish to acknowledge my indebtedness to my two supervisors, Professor Anna Wierzbicka of the Department of Linguistics and Dr. A.E. Backhouse of the Japan Centre, for their valuable comments and advice on the writing of this sub-thesis.

I would also like to thank Professor Tetsuya Kunihiro of the University of Tokyo, Japan for sending me several papers on synaesthesia-related topics.

To my informants, Naoki Matsumoto, Itsuko Maddess and Chika Koizumi, I owe thanks for their time and patience in gathering and checking the Japanese data.

Thanks must also go to Carmen Pereira for an excellent job of typing such a difficult manuscript.

Last, but by no means least, I owe special thanks to the principal informant, my husband, Naoki Matsumoto. Without his constant encouragement and support, this sub-thesis would have truly never been written.
TABLE OF CONTENTS

Chapter 1  INTRODUCTION

FORMS OF SYNAESTHESIA:
Perceptual Synaesthesia
Phonetic Synaesthesia
Perceptuolinguisitc Synaesthesia
Synaesthetic Thought and Verbal Synaesthesia

PATTERNS OF LEXICAL SYNAESTHESIA:
Williams' Model
Kunihiro's Model

CONTEXT OF THE PRESENT STUDY:
Aims
Outline

Chapter 2 - SENSE OF SIGHT
  2A DIMENSION
  2B COLOUR

Chapter 3  SENSE OF HEARING

Chapter 4  SENSE OF TOUCH

Chapter 5  SENSE OF TASTE

Chapter 6  SENSE OF SMELL

Chapter 7  CONCLUSION

Appendix
Bibliography
These sensations are projected by the mind so as to clothe appropriate bodies in external nature. Thus the bodies are perceived as with qualities which in reality do not belong to them, qualities which in fact are purely the offspring of the mind. Thus nature gets credit which should in truth be reserved for ourselves; the rose for its scent; the nightingale for his song; and the sun for its radiance. The poets are entirely mistaken. They should address their lyrics to themselves, and should turn them into odes of self-congratulation on the excellency of the human mind. Nature is a dull affair, soundless, scentless, colourless; merely the hurrying of material, endlessly, meaninglessly.

Alfred North Whitehead, Science and the Modern World
序
論

INTRODUCTION
CHAPTER ONE

INTRODUCTION

FORMS OF SYNAESTHESIA

The phenomenon known as 'synaesthesia' --- "the translation of attributes of sensation from one sensory domain to another" (Marks, 1975:303) --- is one of the most intriguing products of the human mind, and represents one area of study which extends into a number of academic disciplines, including physiology, psychology, philosophy, aesthetics, literary criticism, and linguistics. Perhaps the most commonplace of all synaesthetic correspondences is the conjunction of the sense modality of sight (colour) and touch (thermal sensations): Blue and green are often perceived and described as cool colours, red and yellow as warm.

Synaesthesia manifests itself in a number of ways: (i) in perceptual processes, from purely perceptual synaesthesias, where the different senses of sight, hearing, touch, taste, and smell furnish common information about external reality and where characteristics of sensory experience resemble one another; and (ii) in cognitive processes, where a transitional phase via phonetic symbolism leads to perceptuolingustic synaesthesias, where analogies are drawn between perceptions in one sensory modality (usually the sense of sight) and words in language (usually adjectives); and finally, (iii) to the domain

1. Coren, et al. (1979:206) quote a delightful experiment conducted by Boynton (1971) where the results of his experiments have shown that people will turn a heat control to a higher setting in a blue room than they will in a yellow room.
of purely verbal synaesthesias, where representations of cross-sensory equivalence emerge in language (i.e. synaesthetic metaphors), describing or suggesting similarities among sensory phenomena (Osgood, 1980:205).

In short, the various modes of synaesthesia would seem to form a chain-like progression of cross-modal correspondences, from a purely sensory to a sensory-verbal, to the purely verbal realm (Marks, 1975:327); and this is highly suggestive of the possibility that synaesthetic verbal expressions are by and large dependent on, at least what would appear to be innate, psychological synaesthesias (Abelin, 1988:17). This, of course, further carries the implication that synaesthetic metaphor in language is, in the words of Ullmann, "quite possibly a universal, form of metaphor" (1963:242). Indeed, given the fact that sensory qualities permeate thought as well as perception, a theory of inter-sensory correspondences surfacing in language as metaphorical expressions is complementary to the Sapir-Whorf (1956) hypothesis, which claims that the structure of language influences cognitive behaviour, rather than vice versa.

The importance of the role that psychological synaesthesia would appear to play in verbal synaesthesia cannot be ignored; and accordingly, for a deeper insight behind the fundamental mechanisms of synaesthetic metaphor, we turn now to address each of the phases --- from the purely sensory to the purely verbal forms of synaesthesia --- in more detail.
Perceptual Synaesthesia

Only a small minority of people experience sensory interfusion, where stimulation of a single sense evokes a mixture of sensory images. These individuals — synaesthetes as they are technically called — have truly synaesthetic experiences, where one specific stimulus arouses not only the appropriate, specific corresponding sensation, but also arouses a second sensation from a different modality, uniting it with the first (Werner, 1940:86). To a synaesthetic individual, the taste of vinegar may conjure up bright greenness (i.e. coloured-taste synaesthesia); or to another, the sound of a violin may induce visual images of sparkling white and yellow stripes (i.e. coloured-hearing synaesthesia) (Marks, 1975:303).

To be sure, it is easy to dismiss these synaesthetic experiences as bizarre, idiosyncratic ways of perceiving — a psychological perversity of "freak individuals who have neural cross-circuiting of the sensory fibres for two modalities; terms under which much of the earlier research into synaesthesia was designed and interpreted (Osgood, 1980:205). Although there is little doubt that many of these intersensory experiences can be ascribed to sheer idiosyncracy, many however, cannot.

In particular, research into visual-auditory synaesthesia (i.e. coloured hearing), viz. the synaesthetically perceived colours of vowels and music, which comprises by far the largest body of literature into attested cases of cross-modal perception, has revealed that more often than not, there exist regular
and systematic correlations between dimensions of visual and auditory experience which remain consistent from one synaesthete to another; and, more importantly, that these synaesthetic associations, far from being fortuitous, are "indissolubly bound up with the very development of the faculty of perception" (Werner, 1940:92-3), reflecting fundamental and important properties of human cognizing common in many respects to both synaesthetes and non-synaesthetes alike. Indeed, Marks (1975) goes so far as to claim

....[that] synaesthesia [be] regarded not so much as a distinct, non-normal entity, but as the end point of a continuum on which sensory correspondences vary in strength. (p.316)

The most powerful of sounds to arouse visual images synaesthetically are, unequivocally, speech sounds --- the sounds of vowels, to be more precise. In fact, Marks (1978:87ff.), on compilation of data from a large number of sources, including data from Reichart, Jakobson, & Werth (1949), has come to the conclusion that

....[there are] several regular and systematic relations between vowels and synaesthetically induced colours. The vowel a most often induces images of red and blue, e most often induces yellow and white, i induces yellow, red, and white, i induces red and black, and u and ou induces blue, brown, and black.

2. See Marks (1975) for an excellent chronological summary of literature on visual-auditory synaesthesia.

3. The study from Reichart, et al. (1949) is particularly valuable in that investigation has been carried out on languages other than English, viz. German, Czech, Serbian, Hungarian, and Russian.
Although Marks admits that his survey lacks the precision of "appropriate phonetic description", the evidence is clear for the linguist: mid- to high front vowels induce _light_ colours, back vowels induce _dark_ colours. This dichotomy between light and dark colours may at least explain the 'special' (perhaps neutral?) status of red, which appears with front, mid, and back vowels --- for, according to Wierzbicka (in press), red is "perceived as maximally distinct from both 'light' colours and 'dark' colours. One may, however, prefer to opt for the explanation that mid- to high front vowels induce _bright_ colours.⁴ Indeed, would not the high-pitched sound of [i] be described metaphorically as a _bright sound_ if it were 'sung'?⁴

We diverge here for the moment to make mention of the fact that we observe a similar description for the two 'l' sounds in English --- the so-called 'clear l', articulated towards the front of the mouth (i.e. slightly palatalized), and the 'dark l', articulated towards the back of the mouth (i.e. slightly velarized) (Catford, 1977: 192-3)⁵. Our discussion here has led us into the realm of verbal synaesthesia, but it certainly highlights the fact that synaesthetic correspondences are not the privy of synaesthetes alone. Indeed, one may well question just whose side of the fence Rousseau was on when he wrote:

> Clearly the most eloquent speeches are those containing the most imagery; and sounds are never more forceful than when they produce the effects of colours. (p.40)

---

4. This explanation, of course, fails to take account of the fact that red, a 'bright' colour, is also synaesthetically perceived with back vowels.

5. Interestingly, these two 'l' sounds of English are termed _akarui ieru_ (literally: 'bright l') and _kurai ieru_ (literally: 'dark l') in Japanese (Kunihiro, 1989:29). The Japanese terms however, are most probably calques from English, rather than internally motivated extensions.
Apart from colour, however, another common attribute induced by visual-auditory synaesthesia is perceived size -- an attribute which plays a major part in the language phenomenon known as 'sound symbolism' (e.g. Sapir, 1929; Newman, 1933; Ultan, 1978). Research into dimension-sound correspondences has repeatedly revealed that for certain synaesthetic individuals, a decrease in auditory pitch typically parallels an increase in secondary visual size. Put more simply: low-pitched sounds evoke large visual images; high-pitched sounds evoke correspondingly smaller (Riggs & Karwoski, 1934; Karwoski & Odber, 1938). Again, would there be a single non-synaesthete who would not consider these sets of synaesthetic correspondences as somehow 'appropriately' correlated? --- for example, that the high-pitched sound of [i] is in some sense 'smaller' than the low-pitched ('larger') sound of [a] or [o]?

Along with vowel sounds, it is well recognized that the sound of music --- musical instruments as well as musical notes --- is just as potent a stimulus when it comes to activating synaesthetic experience. While musical synaesthesia has its idiosyncracies, it does have its consistencies as well; consistencies similar to those exhibited in the synaesthetic correspondence of vowels (i.e. sound-colour and sound-size relations). Mudge (1920) for example, records that, in general, the sounds of a flute and of a clarinet (i.e. 'high-pitched' musical instruments) evoke brightly-coloured synaesthetic images, while those of a trombone (i.e. a 'low-pitched' musical instrument) evoke dark-coloured

6. Karwoski & Odber (1938) also note that in synaesthesia there exists systematic correspondences between sound, specifically the tempo of music, and the shape of the evoked visual image: That is, the faster the music, the more angular the shape.
images. It is surely more than sheer coincidence, then, that the philosopher John Locke (1690:38) should write of

A studious blind man, who had mightily beat his head about visible objects, and made use of the explication of his books and friends, to understand those names of light and colours which often came in his way, bragged one day, that he now understood what scarlet signified. Upon which, his friend demanding what scarlet was? The blind man answered, It was like the sound of a trumpet. [my emphasis].

And, as Mudge (1920:345) so perceptively notes, "It is probable that the common term 'tone-colour' is not a mere figure of speech based upon analogy".8

From our discussion of the intersensory correspondences of sound-colour and sound-size (including note 6, sound-shape), anyone familiar with Walt Disney's animated film classic Fantasia should not be surprised to learn that its branded success was in no small way due to the fact that it exploited to the fullest none other than the principles of visual-auditory synaesthesia (Izumi, 1976:114).

When compared to the synaesthesias of sight and sound however, the senses of touch, taste, and smell enjoy little of the systematic correlations that are so regularly exhibited between the visual and auditory dimensions of sensory experience. Most synaesthesias found among the so-called 'minor' sense qualities tend to be idiosyncratic, and no common patterns may

8. Quoted in Marks (1975), p.308. It is interesting to note that Japanese has a similar term: neiro 'tone quality' (literally 'sound-colour').
be induced. The only apparent exceptions to this generalization are, as Marks (1978:98) notes, "(a) the widespread, if not universal, perception of blue and green as cool colours, red and yellow as warm colours, and (b) the less manifest, but nevertheless reliable perception of darker and more saturated colours as heavy".

To explain this gross imbalance between the sensory qualities of sight and sound on the one hand, and those of touch, taste, and smell on the other, Marks (1978) postulates that "there may be little in the way of intrinsic equivalence" between the obvious dichotomy of the modalities (p.98).

**Phonetic Symbolism**

Our discussion so far has dealt with purely perceptual forms of synaesthesia, where meanings in non-linguistic cognizing are translated between the various sensory qualities. One line of evidence, however, often cited to support the view that normal perception shares similar, if not identical, basic intersensory correspondences to those found with synaesthetes adduces from studies of sound-symbolism (i.e. phonetic symbolism) in language.9

In 1929, Edward Sapir was one of the first to demonstrate that actual meanings could be assigned

9. Relevant here are not those onomatopoetic expressions which imitate sonic properties of objects (Ullmann's (1963) "primary" onomatopoeia), but rather those articulated vocal patterns which depict *other* than sonic properties of events (Ullmann's "secondary" onomatopoeia).
to the phonetic properties of speech sounds; specifically, that vowels possess a 'volume' quality which may be linguistically utilized to depict the visual property of the size of the referents. Sapir's study found that there was an overwhelming tendency to consider the referent larger for a word containing the vowel [a] in contrast to a word containing the vowel [i].

Subsequent investigation into Sapir's data by Newman (1933) proved equally fruitful. Newman not only established the existence of systematic correlations between the size judgements (of Sapir's experiments) and such factors as the position of the tongue in forming the vowels, the size of the oral cavity created in pronunciation, and the frequencies of the principal acoustic formants, but he also discovered that there was a systematic relationship between vowel sounds and the dimension of brightness. The symbolic value of the vowels [u] and [a] for instance, were recorded as 'dark'; with the vowel sound [i] being the 'brightest'.

The results of Sapir and Newman's experiments, along with a myriad of other similar studies into the nature of phonetic symbolism (presumably all conducted with nonsynaesthetic subjects), have been instrumental in revealing that some of the principles of sound symbolism, viz. the relationships that exist between the sound of vowels and the dimensions of size and brightness are the same as those that appear to underlie visual-auditory synaesthesias (Marks, 1975:318).

10. Sapir's (1929) experiments were conducted using pairs of 'nonsense' words of the CVC type, e.g. mal-mil.
Perceptuolinguistic Synaesthesia

A shift away from purely perceptual synaesthesia via phonetic symbolism leads naturally into the sensory-verbal realm, i.e. into *perceptuolinguistic synaesthesia*, and towards synaesthetic metaphor.

Investigation into perceptuolinguistic synaesthesias\(^1\) has repeatedly shown that "when one of the sensory dimensions of perceptual parallelisms [is] represented by words ... the lawfulness of the [synaesthetic --- D.F.] process [becomes] even more apparent and stable across individuals, e.g. LOUD going with verbal *near* rather than *far*, TREBLE being *up* and BASS being *down*, MAJOR chords being *light* and MINOR being *dark*, and so forth." (Osgood, 1980:207).

It goes without saying, of course, that investigations into perceptuolinguistic synaesthesia which demonstrate the generality of these parallelisms across members of different linguistic and culture groups have the greatest significance. In 1960, C. Osgood conducted one such study on the cross-cultural generality of synaesthetic thought. Using four different language/culture groups --- Anglo-Americans, Navajos, Mexican-Spanish and Japanese, subjects were asked to judge verbal concepts such as *white*, *black* (concept-terms), *good*, and *bad* (scale-terms) by selectively associating each verbal concept with visual-binary pictorial alternatives such as THIN-THICK (i.e. the subject sees a thin line paired with a thick line), LIGHT-DARK, LARGE-SMALL, etc.

\(^1\) See, for example, Karwoski, *et al.*, 1942; Brown, *et al.*, 1957; and Osgood, *et al.*, 1975.
Osgood's research revealed that not only were the visual-verbal synaesthetic tendencies similar among members of each language/culture group, but that good correlations existed for synaesthetic relations between groups as well. For instance, all four linguistic/culture groups agreed that DARK is *colourless, thick*, and *concentrated*; that UP is *colourful* and *diffuse*; and that THICK is *dark* and *concentrated* (p158). Osgood thus interpreted these findings as indicative of certain cognitive processes which appear to remain relatively stable and independent of differences in language and culture --- a claim directly opposed to the Sapir-Whorf (1956) hypothesis which maintained that the structure of language influences cognitive behaviour.

However, since evidence was forthcoming to support either view, Osgood suggested that to resolve the apparent conflict between these two contrary positions, a distinction be made between two general classes of cognition:

The phenomena which seem to display generality across human groups regardless of language or culture are essentially connotative - the affective "feeling tones" of meaning which contribute to synaesthesia, metaphor and the like. The phenomena which display dependence upon the structure and lexical categorizing of language seem to be essentially denotative -- the multitudinous and arbitrary sets of correlations between perceptual events and linguistic events (i.e. the "rules of usage" of any language code). (Osgood, 1960:168).
The conclusion we may draw from Osgood's findings, similar to those reached decades earlier by Riggs & Karwoski (1934) and Karwoski & Odbert (1938), is that synaesthesia is a cognitive phenomenon related to connotative meaning. Indeed, Marks (1975) echoes the same sentiments:

The dimensions that underlie synaesthesia are the same as those that appear to underlie connotative meaning in general .... .... What synaesthesia provides to cognition is, in essence, a shorthand. Synaesthesia is not just something that is tacked onto ordinary sense perception and cognition. Rather it is an integral part of perception and cognition... The cross-modal correspondences between and among the senses serve to highlight, in a convenient manner, important dimensions held in common (brightness, size, affect, etc.). (p.325)

Osgood's 1960 study is also of further significance in that, on enquiring into the reasons behind similarities in connotative systems despite differences in language/culture, it reveals an important (although not apparently new) theoretical stance towards explaining the phenomenon of synaesthesia. In essence, the theory proposes that synaesthetic correspondences are of two kinds --- they may be innate or acquired.

The first explanation, no doubt familiar to the reader by now, is based on the premise that specific aspects of certain stimuli elicit innate responses which bind together otherwise different modalities of sensory experience --- "and hence they can form connotative significances for perceived objects and their linguistic signs varying along the same basic dimensions" (p.168). Such is the mechanism which underlies many synaesthetic and metaphorical transpositions.
The second explanation that Osgood puts forward to account for the findings of relative cross-linguistic/cultural stability as revealed in his research into perceptuolinguistic synaesthesia, is that certain synaesthesias are the outcome of acquired associations, learned early in life from experiences which may be considered universal. The consistent relations that are observed between visually large and auditorily loud, for instance, may have universal experience as the basis for the association — "it is simply a characteristic of the physical world that as any noise-producing object approaches or is approached, increases in visual angle are correlated with increases in loudness" (p. 168). Such is the stability of universally similar experiences upon which many synaesthetic and metaphorical translations are built — or at least, so it would seem.

It must be pointed out that Osgood's theory of synaesthesia attempts to account for the relative stability of perceptuolinguistic synaesthesias, as it applies to the results of his research into the subject; and there can be no doubt that his general approach is correct.¹² There are innate common responses to stimuli, as well as experiential contingencies, which are borne out linguistically, yet which remain independent of the structure of any particular language. However, as one would expect, Osgood's research also yields many discrepancies — more so at the cross-cultural level than at the intra-cultural level, where synaesthetic correspondences tend to be more consistent — and these, too must be accounted for.

¹² There are several theories of synaesthesia. Osgood's interpretation combines two of the most important hypotheses to account for this phenomenon. Synaesthesia as 'learned associations' is somewhat more controversial, however. Still, it has its following, as in Brown (1958).
Possible reasons for the significant disagreements between the different cultural/linguistic groups are tentatively explained by Osgood (p.154) as follows:  

(1) **Differences in the metaphorical extensions of the visual dimensions themselves.** This may be the case as between Anglos and Japanese, on the one hand, and Navajo on the other, for the scales thick-thin, dark-light and straight-crooked.

(2) **Differences in the denotative meanings of verbal concepts, and hence unsuccessful translation.** This is certainly the case for Anglo vs. Navajo meanings of BLUE.

(3) **Differences in the connotative implications of translations - equivalent verbal concepts.** This may be the case for Anglo vs. Navajo meanings of ENERGETIC, LAZY, FAST, SLOW, and TIGHT.

To be sure, cross-cultural investigations involving aspects of language tend to be designed, inadvertently or otherwise, with ethnocentric bias on the part of the investigator (Wierzbicka, 1985), and it is to Osgood's credit that he acknowledges the obvious pitfalls inherent in the line of investigation undertaken. What Osgood fails to consider, however, is that some of these cultural/linguistic discrepancies, may not result from the method of investigation, but are perhaps indicative of another 'type' of synaesthesia, that is, that some synaesthesias may be culture-specific, "learned from experiences with the arbitrary linkages which happen to be present in the individual's culture" (D'Andrade & Egan, 1974:49).

13. The following three passages are all direct quotations from Osgood (1960).p.154.
14. See H. Wagatsuma (1977) for an interesting discussion on some of the problems involved in Japanese-English cross-cultural/linguistic research.
An excellent example of what may be termed "cultural synaesthesia" can be found in the cosmology of the ancient peoples of China, where the universe is represented as a quinquepartite system of ideas, with each of the five divisions connecting certain qualities of colour, touch, and taste:

<table>
<thead>
<tr>
<th>White</th>
<th>Red</th>
<th>Black</th>
<th>Yellow</th>
<th>Green</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tiger</td>
<td>Bird</td>
<td>Warrior</td>
<td>Earth-master</td>
<td>Dragon</td>
</tr>
<tr>
<td>Dryness</td>
<td>Warmth</td>
<td>Cold</td>
<td>Dampness</td>
<td>Wind</td>
</tr>
<tr>
<td>Sharp</td>
<td>Bitter</td>
<td>Salt</td>
<td>Sweet</td>
<td>Sout</td>
</tr>
</tbody>
</table>

The underlying experience unifying each of these groupings is unequivocally synaesthetic, but the actual correlations would hardly seem universal (note, for example, the 'black-cold' correlation) (Werner, 1940:88).

Only true (innate) synaesthesia forms a universal sensory-perceptual basis for cross-modal equivalence. It is only when these correspondences are expressed verbally, taking us from the domain of sensation into what is more generally considered to be that of cognitive processes, that the mind has the ability to transcend these fixed, intrinsic synaesthetic relations, and the power to manipulate a multitude of cross-modal analogies (Marks, 1978:101).

**Synaesthetic Thought and Verbal Synaesthesia**

Synaesthesia is a significant and integral mode of thought in children, typically regressing with increase in age to a point of considerable diminishment, or even disappearance (Werner, 1940). Instances of synaesthesia, Werner notes, can be detected in almost any careful
observation of child behaviour: A child, on smelling a lilac for example, may exclaim "that smells awfully nice and yellow" (p.89); or as Abelin (1988:17) observes, the sensation of numbness in a child's foot due to poor blood circulation may be related by the child as "I have a dotted foot", where the feeling of numbness (sense of touch) is described as if it were a visual phenomenon. The obvious question to be asked is: Why does synaesthesia tend to be lost with age?

Marks (1978) argues that synaesthesia 'disappears' only to the extent that "primary sensory stimuli no longer contain the power of automatic or Pavlovian-like arousal of images on a secondary modality", hastening to add, however, that this does not mean that the analogies themselves between sensory modalities are lost:

Just the opposite: Cross-modal relations between analogous attributes remain very much alive. (p.102)

The reason childhood synaesthesia tends to be transitional, Marks claims, is due to the fact that synaesthetic perception is a mode of iconic representation, which, although a direct and economical mode of cognition, is also an inflexible one; it thus tends to diminish in importance with the augmented importance of language (i.e. of symbolic representation), a more flexible mode of cognition (Marks, 1975:326).

The transition from iconic to symbolic modes of representation has ramifications for cross-modal correspondences as they are revealed through adult languages: That is, there exists not one, but two forms of metaphoric expression of cross-sensory relation (Marks, 1975:327).
One form of synaesthetic expression is simply the representation of an underlying primordial unity of the senses (i.e. intrinsic correspondence), and as such --- at least as far as it can be said that all languages possess vocabularies of sensation (Brown, 1958) --- is a highly promising candidate for, dare we say it, linguistic universality. Of course, only metaphorical expressions which reflect innate synaesthetic correlations such as those existing between the senses of sight (colour, e.g. brightness/ dimension, e.g. size) and hearing could qualify, but it is undoubtedly an area of promising empirical research yet to be investigated by linguists. Ullmann (1963:243), for example, notes the 'universal tendency' of synaesthetic metaphor in general, furnishing the reader with a host of metaphorical phrases from a diversity of languages, such as loud colours (which, incidentally, does not exist as a synaesthetic collocation in Japanese) couleur criarde (French), colore stridente (Italian), etc., but the possibility of an intrinsic relationship between two sense modalities surfacing universally in language, such as BRIGHT SOUND (perhaps the most likely candidate for a semantic universal), or a similar referent pertaining to sound such as VOICE, (MUSICAL) NOTE, etc., goes begging.

At the verbal level however, synaesthesia need no longer remain solely the manifestation of rigid, primordial cross-modal correspondences (Marks, 1978:102); and with the flexibility that language provides, the mind is able to build upon these fixed inter-modal relationships to create 'new' sensory correspondences.

15. "The principal sensory dimensions of the world are the same for men everywhere and are named in all languages." (p.148)  
16. Many of which, by now, have become 'dead' metaphors.
This second and more prevalent form of synaesthesia, which typifies adult cognition, pervades the speech of the common man to an astonishing extent — to mention nothing of the language of the poet.\textsuperscript{17}

In 1934, the philosopher C. Hartshorne, in his treatise on the commonality of the senses, stated:

Science rests upon the discovery of unity; it is therefore a paradox that the speech of untrained men should postulate far more radical unities of the mental life than scientific psychology as yet recognizes. (p.73)

Research into synaesthesia has come a long way since Hartshorne wrote these words, and it is no longer considered paradoxical that men should, and indeed do, express themselves in synaesthetic metaphor, well beyond the bounds of any intrinsic cross-modal relationship.

**PATTERNS OF LEXICAL SYNAESTHESIA**

Language abounds in synaesthetic metaphor (Ullmann, 1963).\textsuperscript{18} Expressions such as *dull colours*, *soft sounds*, *sweet smells*, *bitter cold* etc., once fresh and creative phrases, are so commonplace to our everyday speech that they have fallen victims to their prevalence, leaving most of us unaware of their cross-modal characteristics. It is only when we begin to look further afield into the extended uses of the sensation vocabulary in other languages, that we come to appreciate the

\textsuperscript{17} See Ullmann(1957) for an excellent discussion on literary synaesthesia.

\textsuperscript{18} "There is a rich literature on various aspects of synaesthesia, and by casting the net even wider it would not be too difficult to find out how general the phenomenon is, and whether it is, in fact, a semantic universal" (p.243)
significance of these metaphors: BITTER COLD,\textsuperscript{19} for instance, does not exist in Japanese, but neither does YELLOW VOICE (\textit{kiiroi koe}) in English; SALTY VOICE (\textit{shiokaragoe}) does not exist either, as a synaesthetic metaphor in English, but its meaning of 'hoarse voice' is more readily interpretable and appreciated by English speakers than \textit{kiiroi koe}, meaning 'shrill voice'.

On the other hand, despite what would appear to be a relatively small number of differences in inter-modal extensions among languages, languages on the whole tend to display highly similar synaesthetic expressions, suggesting that "the referents have shared attributes which have caused identical metaphors to be independently discovered by different peoples" (Brown, \textit{1958:146}). To say what it is that is shared, however, is not always an easy task, as Brown notes:

I, at least, am not able to name any such attributes....what has thermal cold in the skin to do with coldness heard in a voice or seen in a face?(p.145)

Even extensions of sensory terms beyond the domain of sensation show similar tendencies among languages. In an early study by Asch (1955) regarding the transfers of terms denoting sensory qualities to the domain of personality characteristics in a number of historically unrelated languages, viz. Old Testament Hebrew, Homeric Greek, Chinese, Thai, Malayalam (south-western India), and Hausa (western Africa), Asch found that in all these languages, STRAIGHT (a 'sight', i.e. dimension, term), when applied to persons, implies honestly and righteousness,

\textsuperscript{19} The term 'bitter' actually derives from \textit{bitan} 'to bite', a tactile-associated word (Williams, 1976:476).
whereas CROOKED implies dishonesty and wile. The term HOT however, does not reveal as strong a parallelism, denoting: rage (Hebrew), enthusiasm (Chinese, Malayalam), sexual arousal (Thai), worry (Thai.), energy (Hausa), and nervousness (Shilba, a Berber language). However, as Asch stresses, the apparent disagreement among these unrelated languages should not be taken as evidence of the operation of accidental factors, since there is undoubted kinship in the range of meanings --- all refer to heightened activity and emotional arousal (p.37).

Traugott (1986) also notes the similarities exhibited by languages in their extensions of their sensory vocabularies beyond the sensory realm: "... in many languages the words for brightness in colour turn into words for intellectual ability, as in bright, dull ..., whereas it appears that those for the basic hues, red, yellow, green, blue typically turn into words for moral and emotional qualities" (p.156). A delightful sentence from Marks (1978:191) succinctly sums up the situation for English:

Emotions have their hues, when we become green with envy, purple with passion, or just plain blue.

Generally it would seem, however, that in terms of meaning, extensions which transcend the domain of sensation become more difficult to predict. 'Brightness' in Japanese, for example, extends to the domain of personality characteristics to mean 'cheerful' (i.e. akarui), rather than follow the seemingly general tendency of denoting intellectual ability (see Traugott, 1986)
Nevertheless many synaesthetic extensions, on the other hand, due to the existence of meaningful similarities across different sense modalities, are appreciated by virtually everyone, and perceived immediately as 'appropriate' (Marks, 1978:212); though, to reiterate a point made in previous discussion (p.11f.), it is not the case that synaesthetic metaphors need solely rely on universally understood similarities for their existence.

Partial synaesthetic metaphors like "loud colours" and "bright smells" identify the sensory qualities of only a single modality. Because the metaphor is specified incompletely, the analogy is, in consequence, defined or created in part by the metaphor itself. As long as an intrinsic correspondence underlies the metaphor, its meaning will probably transfer effectively. Indeed, we may infer that the use of partial, intrinsic metaphors finds its justification in the existence of natural inter-modal correspondences. It is presumably because people can comprehend what bright or silvery sounds are --- that they are high pitched, relatively loud (in the case of bright sounds), perhaps staccato --- that these phrases have communicative value. (Marks, 1978:214).

Not all synaesthetic metaphors, however, convey their meanings so deftly (Marks, 1978:214). While phrases such as mellow colour, soft smell, and loud taste are readily interpretable, although 'non-existent' in present-day English, it is much less apparent what is meant by green odor or loud cold for instance.

20. These synaesthetic expressions actually did appear in the English language. According to the Oxford English Dictionary, the first citation date for mellow (taste) as a colour term was in 1563; soft as an olfactory-term, 1400; and loud as a gustatory-term, 1641. (Quoted from Williams, 1976:476). It would appear, however, that for some English speakers mellow colour does exist. (A.E. Backhouse, personal communication).
Williams (1976) notes that from time to time, such synaesthetic expressions can, and have found their way into the English language, but that the majority of them, with time, eventually fall into disuse.

Why certain synaesthetic expressions are not maintained, suggests Marks (1978), may be because "they have no very clear or strong synaesthetic partnership"(p.214). Decidedly the more interesting question however, is why such expressions should originate at all.

**Williams' Model**

In 1976, J. Williams' article "Synaesthetic Adjectives: A Possible Law of Semantic Change" appeared in *Language*, claiming the strongest generalization to date concerning the highly regular diachronic movement among the meanings of English adjectives referring to sensory experience. In this article, Williams convincingly demonstrated that when sensory adjectives from one lexical field transfer to another, they do so in a manner too regular to be fortuitous. Tactile words such as *sharp* and *dull*, for example, develop as descriptors of taste (*sharp tastes*), of colour (*dull colours*), or of sound (*soft sounds*). These findings complement Ullmann's (1957) general conclusion on literary synaesthesia; that is, that (English) literary synaesthesia, displays one main direction of semantic transfer --- words or phrases that describe touch come to describe other, higher senses, especially hearing.
Williams' generalization of transfer movement among the earliest sensory meanings of English adjectives may be diagrammed as follows:

```
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Colour</th>
<th>Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touch</td>
<td>Taste</td>
<td>Smell</td>
</tr>
</tbody>
</table>
```

**FIGURE 1** (From Williams, 1976)

In sum, the model yields the following data:

1. Touch-words transfer to taste (**sharp taste**), to colour (**dull colour**) or to sound (**soft sounds**).
2. Taste-words transfer to either smell (**sweet fragrance**) or to sound (**dulcet music**).
3. Smell-words do not transfer.
4. Dimension-words transfer to colour (**deep colour**) or to sound (**deep sounds**).
5. Colour-words only transfer to sound (**bright sounds**).
6. Sound-words only transfer to colour (**loud colours**).

While 'non-predicted' transfers have occurred now and again throughout the history of the English language, Williams notes that these counterexamples to the model tend to fall out of use quickly. The collocation **loud taste**, for instance, was first cited in the English language in 1641, but since this represents an irregular
transfer (i.e. *loud*, as an original acoustic term, transferred 'back' to the taste domain), it no longer exists in present-day English, whereas the more recent (first citation 1849) collocation *loud colour* (a predicted transfer from the sound to the colour domain) has survived. Excluding these non-predicted transfers which have made their way into and out of the English language, Williams' generalization of transfer movement predicts 97% of all synaesthetic transfers that have taken place over time (Williams, 1976:464). Moreover, his evidence is suggestive, to say the least, and does support his generalization that "sensory words in English have systematically transferred from the psychologically least differentiating, most evolutionary primitive sensory modalities to the most differentiating, most advanced, but not vice versa" (pp. 464-465).

While Williams (p. 465) emphasizes that there is no intrinsic reason why synaesthetic transfer should tend to display a hierarchical progression from the most primitive of sensory systems (touch) to the most advanced (sight, hearing), it is curious to note that this unidirectionality of synaesthetic transferences has its parallel in the sensory-perceptual synaesthesias of the synaesthete: "...sight may arouse taste, or taste may arouse sight, but synaesthesia usually operates in only one direction, not both. Synaesthesia tends to be a one-way street" (Marks, 1978:87).

Of course, when a word form one modality transfers to another, it is then quite possible, and often the case, for the word to transfer yet again to a second

---

21. Actually, there are a number of ways to calculate the level of agreement with the generalization. Depending on which way one chooses, agreement ranges from 83% to over 99% (Williams, 1978:468).
modality. "Post-first-order" synaesthetic transfers are also predicted from Williams' model, tending to adhere to the same general constraint as first-order (i.e. earliest sensory meaning) transfers. The touch-term *dull* (citation date:1230) for instance, by-passed the modalities of taste, smell, and dimension, and moved to colour (1430) as a second-order transfer, and from there, to sound (1475) as a third-order transfer.

Although Williams' research into the regularities of semantic change among sensory adjectives was based mainly upon English, it was also found to be applicable to the development of cognates in several Indo-European languages and to a small sampling of words from Japanese, strongly suggestive that his model of semantic extension offers a powerful hypothesis in regard to past or future semantic change in any language.

Kunihiro's Model

In his book "Imiron no hoohoo" (Methods in Semantics, 1982), Tetsuya Kunihiro, in passing reference to Williams' (1976) model of semantic change, claims that the synaesthetic metaphor *surudoi nioi* "(lit.) sharp smell" would "seem to exist" ('arisoo') in Japanese, thus constituting a departure from Williams' predicted pattern of intersensory transferences. Six years after Williams' article was published in *Language*, Kunihiro's remark appears to be the first from a Japanese linguist in regards to relating Japanese synaesthetic transfers as they apply to Williams' model.

22 It should be pointed out that I have found no Japanese speaker happy with the phrase *surudoi nioi*. 
In 1989 however, in a paper entitled "Gokan o arawasu goi --- Kyookankaku hiyuteki taikei" (Vocabulary expressing the five senses --- a system of synaesthetic metaphor), Kunihiro expounded his own model of synaesthetic transference for Japanese:

![Diagram](https://via.placeholder.com/150)

**FIGURE 2**  (From Kunihiro, 1989)

A cursory glance reveals that the model departs from Williams' version along the following parameters:

1. Touch-words transfer to smell.
2. Taste-words transfer to sight.
3. Smell-words transfer to dimension.

A few comments are in order: The first point to be made is that apart from (1), touch-to-smell transfers.

---


24. The arrow leading from smell would seem to be a typographical error, as Kunihiro mentions nothing of smell-to-dimension transfers in his discussion.
(which would appear to be based on the author's own intuition), the remainder of Kunihiro's examples have been taken from various publications, e.g. novels, and the like; the example of a touch-to-smell transfer being none other than the dubious collocation *surudoi nioi* (see note 22), and the verbal phrase *sasu yoo na nioi* 'smell which seems to penetrate, sting' (acceptable to native speakers, however).

The second point to mention is that Kunihiro has substituted Williams' 'colour' domain for the more general domain of 'sight' in his model, and by doing this, allows himself to formulate another parameter with respect to which Japanese "differs" from Williams' model for English, i.e. the parameter of taste-to-sight transference. This, of course, is not really the case, for if Williams' model were to incorporate 'sight' in general (rather than the narrower domain of 'colour'), phrases such as *sweet place* and *sweet sight* would also become legitimate synaesthetic transfers in English. However, given the fact that Kunihiro has seemingly manipulated Williams' model for this purpose, one is well justified in criticising Kunihiro's investigation into Japanese synaesthetic transfers on the grounds that it lacks the rigour required for such an undertaking: He fails to incorporate a rather obvious smell-to-sight transfer into his model, i.e. *chinamagusai kookei* '(literally) blood-smelling scene' (i.e. scene of bloodshed).

Finally, Kunihiro's discussion of counterexamples against his own model of Japanese also raises an important issue. Kunihiro cites as counterexamples, the 'back transfers' --- that is, transfers which move from a more differentiating modality to a less
differentiating modality --- of sight-to-taste, i.e. *aji ga koi* 'taste is strong' (literally: 'rich' (colour) and of taste-to-touch, i.e. *sen ga amai* 'stopper (of a bottle) is loose' (literally:'sweet').

The sight-to-taste transfer, *koi*, serves nicely to highlight the issue at hand: It is by no means a straightforward matter to posit *kot* 'rich (colour)' as an irregular transfer to the domain of taste, since the term also occurs in the domain of touch, i.e. *koi ekitai* 'thick fluid' (if viscosity is a tactile modality -- and we argue that it is). It is quite possible that *koi* originally transferred from the sight domain to the domain of touch first, and from there, regularly transferred to the domain of taste. (This, of course, creates a new 'counterexample' --- a transference along the parameter of sight-to-touch).

Although Williams (1976), in his examination of synaesthetic transfers among a sample of Japanese adjectives, acknowledges that Japanese does not have a dictionary like the *Oxford English Dictionary* in which citation dates of earlier and later meanings are available --- but that *Koojien* (a standard Japanese dictionary) lists its entries in a "roughly historical order" (p.470), it will become progressively apparent during the course of our discussion on Japanese synaesthesia, that no Japanese dictionary is entirely satisfactory for a diachronic study such as one dealing with synaesthetic transferences: At times, it is difficult to trace the route of transfer with accuracy, especially post-first-order transfers, since Japanese dictionaries vary on their order of entries (even from edition to edition), and all one can do is offer a plausible explanation for the probable path of transfer. Even this, on occasion,
proves a difficult task, and alternative explanations must be provided. Kunihiro himself is well aware of the inadequacy of Japanese dictionaries, yet he so assuredly postulates *koi* as a transfer to the taste domain, without mention of other possible avenues.

In conclusion, Kunihiro's model represents nothing more than an unconvincing attempt on the author's part to come up with a model for his own language that would substantially differ from Williams'. Perhaps the major criticism against Kunihiro's approach is his inclusion of 'literary-style' synaesthesias --- synaesthesias which, by the way, may deliberately run against the grain of an intrinsic (or appropriate) cross-modal relationship for the purpose of literary effect. Moreover, the 'extra parameters' Kunihiro postulates for Japanese, as compared to Williams' model, is highly questionable. In terms of transfer numbers, there appears not enough movement along these parameters to warrant the establishment of a 'new' model; and such transfers would have best been treated, along with the 'back transfers' as simply counterexamples to Williams' model.

**CONTEXT OF THE PRESENT STUDY**

**Aims**

The present study was inspired by Williams' (1976:471) brief survey of a small sample of synaesthetic adjectives

25. In reference to Williams' (1976) article on synaesthesia, Kunihiro states "His data of Japanese is mainly collected from a Japanese dictionary, and it is far from sufficient" (personal communication).
in Japanese (see page 31), the purpose of his undertaking being to determine whether these adjectives adhered to the same principles of extension (i.e. Williams' model) as their English counterparts. The results of Williams' research revealed that this select group provided for 91% rule agreement.

The aim of this study is thus twofold: The first of our objectives is to expand on Williams' survey of Japanese by examining a larger corpus of synaesthetic adjectives in the language. 'Adjectives' by our definition encompass a variety of types (see Backhouse, 1983 for a discussion on the types of adjectives that exist in Japanese), including not only the native -i adjectives, to which Williams seems to have limited most of his data (i.e. twenty-nine out of the thirty-two Japanese adjectives used in Williams' survey are of this type). Moreover, in view of the number of uncertainties (necessarily) present in a study of this kind, a figure expressing the percentage of total rule agreement, in comparison with Williams' model for English, has deliberately been avoided. Suffice it is to say that most synaesthetic transfers in Japanese adhere to Williams' predicted pattern, although there are a handful of exceptions.26

26. Our reservations in calculating the percentage of rule agreement as it applies to Williams' model may at first seem to contradict our Conclusion chapter, which attempts to sum up our research into Japanese synaesthesia in terms of the "facts and figures". It will be noted, however, that calculations in that chapter are solely provided to highlight significant tendencies exhibited by these transfers, which may then be compared with the tendencies exhibited by Williams' model.
Listed below are the two kinds of evidence. In parentheses are those senses which are not given in Köjien for the relevant word, but are acceptable to my informants.

I. Evidence from Köjien
   A. Agreeing with prediction:
      1. *nibui: dull; dim light; muffled sound. T-C-S.
      4. *awai: thin; pale. D-C.
      5. *asai: shallow; pale. D-C.
      6. *chisai: small; low sound. D-C.
      7. *fukai: deep; deep color; (rich odor in Köjien, but not acceptable to my informant); (deep voice). D-C-(O)-(S).
      8. *hikui: low; low sound. D-S.
      9. *takai: high; high sound. D-S.
     10. *usui: thin viscosity; thin color; *thin taste. T(?)-C-*G.
   B. Disagreeing with prediction:
      2. *koi: rich color; *thick fluid; *deep taste/smell. C-*T(?)-*G.

II. Confirmed by informants
   A. Agreeing with prediction:
      1. *arai: rough; (taste; sound). T-(G-S).
      2. *atatakai: warm; (color; sound). T-(C-S).
      4. *karui: light weight; (taste; sound (?)). T-(G-S).
   B. My informants could think of no cases that contradicted the generalization.

The 32 items provide lexemes for 39 correct transfers, plus one possible corrected transfer. The four incorrect items transfer to an incorrect modality (*usui from color to taste, *amai from taste to touch; *koi from color to tactile, if viscosity is a tactile modality, and to taste/smell). Considering only the positive transfers and the single correction, and ignoring the correct non-transfers, we find 40 correct predictions, four incorrect, or 91.7% rule agreement. (From Williams, 1976:471).
After mapping out the distribution of possible transferences to the various sensory domains, the second and more important objective of our study is to examine how these synaesthetic adjectives pattern in their 'new' domain, e.g. in terms of collocational possibilities, meaning, etc. Extension of many of these synaesthetic adjectivals has occurred along the same parameters as their English equivalents, but the actual collocations they have entered into within their 'new' domains, at times, may strike the English speaker as indeed 'foreign', though not necessarily uninterpretable, e.g. asai iro '(lit.) shallow colour' means 'pale colour'.

Outline

Thesis Structure. The main body of the thesis is divided into five chapters, covering each of the five sense modalities: SIGHT, HEARING, TOUCH, TASTE, and SMELL, in that order; the chapter on SIGHT includes both the domains of DIMENSION and COLOUR.

Each of these chapters begins with a table listing all the adjectivals 'basic' to the particular domain, depicting permissible movement of their synaesthetic transferences to other domains by the letter X; a dark X indicating that the transfer has been marked out for discussion in the main body of the chapter. All synaesthetic adjectivals, however, are represented on the subsequent page(s) in sentences which exemplify their usage in the basic domain (i.e. their basic meaning), followed
Source of Data. All collocations cited in this thesis involving Japanese sensory words, and including the elucidation of the meaning of these collocations, as well as the list of sentences presented at the beginning of each chapter exemplifying the extended uses of the sensation vocabulary in Japanese, reflect, by and large, the native competence of one informant --- a 35 year-old male, native to Tokyo. Supplementary data and (on occasion) confirmation of data as regards acceptability has been provided by two female informants, both 30-35 years of age, one native to Saga, the other, native to Tokyo.

Needless to say, of course, not all native speakers of Japanese may agree with all that is expounded in this thesis. Indeed, at times it was difficult for informants to draw the line between synaesthetic collocations of everyday usage, creative 'one-off' collocations, and collocations bordering on the literary use of language. To glean insight into the problem, non-Japanese speakers are invited to reflect for a moment on the synaesthetic collocation 'loud perfume' in English. (For me personally, I never use this collocation; but I understand what it means. I think that others may use it, however. Then again, perhaps it is literary...).
As far as it has been possible to determine, all the Japanese examples in this thesis are based more or less on 'everyday' usage; where examples should depart from this, such as the collocation _asai iro_ '(lit. shallow colour' which is more of a specialist (i.e. designer, artist) term, their departure from everyday usage has been noted.

**Approach.** The theoretical approach adopted in the present study to explore the topic of Japanese synaesthesia is loosely that of semantic field theory, as expounded by Lyons (1977), Lehrer (1974, 1978), and Kittay (1981). In this theory, a related set of terms that belong to a semantic field are examined for comparison or contrast; and although the theory itself suffers from considerable methodological problems in ascertaining the boundaries delineating a semantic field, one point in its favour is that the traditional dictionary approach of deciding between homonymy and polysemy is avoided, because words belonging to different fields are simply treated as different words (Lehrer, 1974:10).

The analysis of metaphor is particularly amenable to field theory (explicitly explored by Kittay & Lehrer, 1981; Kittay, 1987; and implicitly by Lakoff & Johnson, 1980): First, as Lehrer (1974:112) notes, we may study the conditions under which a single word in a field comes to acquire a new meaning --- this usually occurring when there is shared similarity between the referents; and secondly, the way in which the structure of the semantic relations of the basic field provides the structure or reorganizes some previous structure of the second field can be examined.
The main body of the thesis is simply a descriptive exploration into the semantic behaviour of a number of synaesthetic transfers in Japanese. Each of the sensory adjectivals chosen for 'case study' is first examined in terms of its 'original' meaning at times, this may mean determining how the word patterns in its basic field in relation to common paradigmatic relationships such as synonymy, antonymy, and incompatibility before turning to examine how the (extended) term patterns in its second field, and generally attempting to elucidate the 'new' meaning. We observe that in synaesthesia, due to the nature of the semantic relations in many of the semantic domains of sensory experience, there is a tendency among synaesthetic adjectivals for only single words in a field to extend their meaning.

27. As a synchronic study with diachronic implications, the problem of determining the basic domain of a lexical item is a central issue in this topic. Most adjectivals are easily placed, since which sense is basic is intuitively known. The domain of colour, however, has been expanded (to parallel Williams' list of 'colour' adjectivals) to include aspects of hue (e.g. kiiro 'yellow'), saturation (e.g. kot 'rich') and brightness (e.g. akarui 'bright').

The placement of kot into its basic domain is one of the most controversial issues in this thesis (not to mention its antonym usui), as synchronically it patterns in the domains of colour, touch, taste, and smell. Of course, with the semantic field approach, the problem of which sense of the term is basic does not affect our examination of kot as it patterns in each of these sensory domains; but since speculation as to its probable direction of transfer implies diachrony, the issue of original meaning takes on great significance.

(Contd.)
In examining synaesthetic transfer, it is a mistake to regard all transfers as having taken place in the same way---some transfers are no doubt the product of innate synaesthesia at work, some are based on learned or cultural associations, while others are the result of perceived similarity; and hence, we do not believe that any currently available formal theory is capable of encompassing all these facts. It is with this conviction that we have opted for an approach of descriptive richness combined with a lower degree of theoretical control, rather than theoretical rigour combined with descriptive poverty---and no apology is made.

(Contd.) Fortunately, there are only a few adjectivals in the thesis which cannot be placed in their basic domains with absolute certainty: One criterion employed for placement of these terms has been Bloomfield's axiom that abstract meanings tend to develop from concrete meanings (1933:429). Other methods of placement however, have necessarily been guesswork.
視覚

SENSE OF SIGHT
### Synaesthetic Adjectivals of Dimension

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Colour</th>
<th>Touch</th>
<th>Taste</th>
<th>Smell</th>
<th>Sound</th>
</tr>
</thead>
<tbody>
<tr>
<td>OOKII</td>
<td>'big'</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHIISAI</td>
<td>'small'</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAKAI</td>
<td>'high'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>HIKUI</td>
<td>'low'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>FUKAI</td>
<td>'deep'</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>ASAI</td>
<td>'shallow'</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FUTOI</td>
<td>'thick'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>HOSOI</td>
<td>'thin'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>SENSAI</td>
<td>'fine'</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>ATSUI</td>
<td>'thick'</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>USUI</td>
<td>'thin'</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>TOOI</td>
<td>'far'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
EXAMPLES OF INTERSENSORY TRANSFERS
FROM THE DOMAIN OF DIMENSION

OOKII

Osumoo-san wa karada ga ookii.
Sumo wrestlers have big bodies.

→ (So) Motto ookina koe de hanashite kudasai.
Please speak in a louder voice.

CHIISAI

Kono kutsu wa watashi ni wa chiisasugiru.
These shoes are too small for me.

→ (So) Sutereo no oto o motto chiisaku shite kudasai.
Please turn down the stereo a bit more.

TAKAI

Takai ki ni noboru no wa kiken da.
It's dangerous to climb tall trees.

→ (So) Kanojo no koe wa takai. (i.e. pitch)
She has a high-pitched voice.

Terebi no oto ga takai. (i.e. volume)
The television is loud.

HIKUI

Kare wa se ga hikui.
He's short.

→ (So) Kare no koe wa hikukute miryokuteki da. (i.e. pitch)
His voice is slow and very appealing.

Motto hikui koe de hanashi nasai. (i.e. volume)
Talk in a softer voice.

FUKAI

Kono kawa wa sugoku fukai.
This river is very deep.

→ (C) Aki no sora wa fukai ao da.
The autumn sky is deep blue.

→ (Ta) Kono furansuryoori wa fukaku fukuzatsu na aji da.
This French dish has a pervasive, complicated flavour.
(Sm) Kono kana wa fukai kaori o hanatte iru. This flower gives off a strong smell.

(So) Kanojo no baiorin no neiro wa nante fukai no daroo. What deep timbre her violin has!

Asai
Asai puuru wa kodomoyo desu. The shallow pool is for the children.

(C) Sono kimono no dezain niwa motto asai iro ga au. It would suit that kimono's design if the colour were lighter.

Futoi
Kono tera no hashira wa honto ni futoi. The pillars of this temple are really thick.

(So) Kare no koe wa futokute yoku tooru. His voice is deep and carries well.

Hosoi
Kanojo no uesuto wa hosoi. She has a slender waist.

(So) Kanojo no koe wa hosoi. She has a thin voice.

Sensei
Kanojo wa sensai na yubi o shite iru. She has long, slender fingers.

(Ta) Nante sensai na aji daroo. What delicate flavour!

(Sm) Kono koosui wa sensai na kaori ga suru. This perfume has a delicate fragrance.

(So) Sensai na merodii ga mimi ni kokochi yoi. Delicate melodies are pleasing to the ear.

Usui
Kono hon wa usui. This book is thin.
→(C) Motto usui ao ga anata niwa niau.
A paler shade of blue would suit you better.

→(To) Usurasamui hi ga tsuzuite iru.
The chilly days are continuing.

→(Ta) Osaka no ningen wa aji ga usui
ryoori o konomu.
People from Osaka have a preference
for light-flavoured dishes.

TOOI

Nihon wa tooi kuni da.
Japan is a far-off country.

→(So) Kare wa mimi ga tooi.
He's hard of hearing. (lit.'ears are far')
CHAPTER TWO-A

VISUALLY PERCEIVED DIMENSION

In accordance with Williams' model of intersensory transfer for English, the overwhelming majority of Japanese synaesthetic dimensional terms have extended their meanings to the domains of colour and sound --- the domain of sound receiving more than three times as many transfers as colour.

DIMENSION OF COLOUR

There are three terms of dimension in Japanese which have regularly transferred to the domain of colour: asai 'shallow', fukai 'deep' and usui 'thin'. Each of these terms will be discussed below.

Asai. Fukai

In their basic domain, asai 'shallow' and fukai 'deep' function as antonyms to denote a distance which is either shorter or greater in length than that which is considered the 'norm', extending from the surface of an object to its inside, e.g. asai kawa 'shallow river', fukai umi 'deep sea', fukai ana 'deep hole' (Kunihiro, 1970:14).

As transfers to the domain of colour, semantic opposition between these two terms is maintained, although fukai would seem to be of more frequent usage than asai which, according to native speakers, tends
to sound somewhat as a 'specialist' term (i.e. designer, artist, etc.).

Asai, on the one hand, seems to be restricted in collocation to the noun iro 'colour' to denote colours of low saturation: asai iro 'asai colour'. From a comparative viewpoint, of interest here is the fact that not only does the term asai cover those shades of colour which are normally described as 'light' in English, but also encompasses colours of extreme levels of low saturation where colour seems 'weak' or 'washed out', which are usually designated in English as 'pale'.

It must be noted however, that although asai may be used to refer to light and pale colours in general, it does not tend to collocate with lexical items denoting specific colours, e.g. *asai ao no kabe 'light blue wall', *asai kiiro no kami 'pale yellow paper'. The only exception to this would appear to be asai midori 'light/pale green', its acceptability for some native speakers perhaps based on the analogous fukai midori, a well-established collocation for all speakers.

1. The Berlin and Kay (1969) colour chart was used to test two informants who were asked to indicate the general area of colour which could be described as 'asai' in Japanese.

2. A.E. Backhouse (personal communication) correctly points out that fukai ao is a possible collocation. My informants, however, are not happy with asai ao. Perhaps this has something to do with the fact that asai as a colour descriptor is not in common usage.
Asai, however, does occur in certain compound words which refer to specific colours, although only a few examples may be cited: **asamidori** (*asa-* 'light/pale' + *midori* 'green') 'light green; pale green'; **asagi** (*asa-* 'light/pale' + *ki* 'yellow') 'light blue; pale blue'.

A third compound, **asaguroi** (*asa-* 'light/pale' + *kuroi* 'black') 'darkish' is possibly the most frequently used term, although its range of application is highly restricted, and is used to denote a type of skin colour induced by prolonged exposure to the sun. The colour term *kuroi* 'black' itself is frequently used to refer to a well-tanned complexion, e.g. *kuroi kao* 'well-tanned face'; an **asaguroi kao**, then, denotes a face which is 'lightly tanned'.

Interestingly, the English language also uses the colour term *black* in reference to well-tanned skin, but unlike *kuroi*, this is highly colloquial in its usage, e.g. *Sue lives at the beach — no wonder she's black!* However, unlike Japanese **asaguroi**, English cannot employ the same colour-term to denote skin which is only lightly tanned, e.g. *Sue is light black.* The colour-term *brown*, or variants thereof, must be used.

---

3. We revise what was previously said about the collocation **asai midori** being based on analogy with **fukai midori**. Note that of the three compounds involving *asa-* it is only **asamidori** whose meaning can be predicted on the basis of morphemic make-up. It would thus seem that since the compound **asamidori** exists, informants are therefore happy with **asai midori** as an acceptable collocation.

4. *Kuroi* is not the translation equivalence of *black* when used in reference to well-suntanned skin. Although, arguably, only a difference of degree, a more accurate rendition would be **makkuro** 'jet black', e.g. *Ken wa kaigan o yado to shite iru kara makkuro ni kimatte iru* 'Ken lives at the beach — no wonder he's makkuro'.
Fukai as a colour-term, on the other hand, has a wider range of application than its antonym asai, and commonly occurs in collocation with the nouns iro 'colour; and iroai 'shade of colour' to denote colours at a high level of saturation, which would be described in English (also synaesthetically!) as 'deep', e.g. fukai iroai 'deep shade (of colour)'.

Nouns denoting specific colours may also occur in collocation with fukai, perhaps the most common of these being fukai midori 'deep green' and fukai ao 'deep blue'. Fukai murasaki 'deep purple' and fukai aka 'deep red' would also seem to be acceptable collocations and it is fascinating to note that these colours are the very same colours that come to mind as referents of the descriptor term 'deep' in English. Why should this be so? Why should two unrelated languages refer to the same range of colours by the synaesthetic dimension-term 'DEEP'? And why do not collocations such as *deep yellow or *fukai kiiro exist in either language?

We contend that although deep/fukai may be used in English and Japanese to describe a variety of situations (e.g. deep pocket, deep cut, deep well etc.), the prototypical situation --- one which is immediately brought to mind for speakers of English and Japanese alike --- is that deep/fukai denotes distance (in a downwards direction) from the surface of a large body of water, such as a lake or an ocean.
Indeed, this would seem to explain why the colours green and blue (being the perceived colour of such bodies of water) are the most common referents of 'deep'; unfortunately, however, this is a hypothesis which does not explain the Japanese situation so well, given the fact that the colour of a body of water can only be described as ao 'blue/green' and never as midori 'green' (the colour of vegetation). It is not out of the question though, that fukai midori developed as a subsequent collocation from an already established fukai ao (which also includes a 'green' part in its range), in much the same way as midori came into Japanese, gradually replacing the 'green' part of ao referents, as the language passed through the various stages of expanding its colour lexicon (Ando, 1986:37f.).

Of course, one would not expect a low-saturation colour such as mizuiro 'light-blue' to be a permissible collocant of fukai; *fukai mizuiro 'deep light-blue' being semantically anomalous. This stands to reason --- water perceived as 'light blue' is necessarily shallow (asai). It is only with distance that the colour of water is perceived as darker (deepness and darkness going hand in hand), and it is for this reason, we maintain, that by analogy, light colours such as yellow may never be referred to as 'deep' or 'fukai'.

5. This type of synaesthesia is based upon learned associations which is universal: One would not expect any language to possess synaesthetic expressions such as DEEP LIGHT-BLUE or SHALLOW INDIGO.
Analogy would also seem to explain why the collocation *deep purple* and *fukai murasaki* should exist in both English and Japanese (and we dare say in a host of other languages), for the colour purple is not unlike the colour blue in hue and, similarly, also ranges from the very light shades (lilac, mauve, etc.) through to the darker shades.

The occurrence of *deep red/fukai aka*, however, is more difficult to explain. According to Wierzbicka (in press) "it [i.e. the colour red --D.F.] is vivid ('colourful'), it is highly noticeable both during the day and during the night (and therefore is perceived as *maximally distince from both 'light' colours and 'dark' colours*)" [my emphasis]. *Red/aka* is, nonetheless, a hue which is perceived as being 'saturated with colour', and it is possibly for this reason that the collocation *deep red/fukai aka* exists both in English and Japanese (i.e. speakers make an association between 'richness' of red and deepness). At any rate, the fact that two unrelated languages should make the same extended use of the dimensional-term 'DEEP' in reference to the colour *red/aka* indeed points to a case of appropriate association, rather than arbitrary.

Usui⁶

As a term originating in the field of dimension, *usui* 'thin' patterns in its basic domain in an antonymous relationship with *atsui* 'thick', also an original

⁶. The transference of *usui* 'thin' is without doubt the most controversial issue in this thesis: It patterns as the antonym of *atsui* 'thick' in the domain of dimension, and as the antonym of *koi*
term of dimension. However, since only *usui* has
synaesthetically extended its meaning to other sensory
modalities, semantic opposition with *atsui* is lost
once outside the basic domain. This situation, of
course, runs counter to Lehrer's (1974;1978) tenet
about semantic extension:

(Contd.) in the domains of colour, touch (viscosity),
and taste. At first blush, one is perhaps tempted
to consider *usui* (-*atsui*) and *usui* (-*koi*) as a case
of homonymy, but as the meanings of *usui* in these
domains would seem to be related, a single polysemous
lexeme has been posited. (Indeed, this is how *usui*
is treated by Japanese dictionary makers). Even more
controversial an issue however, is the problem of
deciding which domain is to be taken as basic; and the
position taken by the present author is that *usui* is
basic to the domain of dimension.

Since the various senses of *usui* (and *koi*) will
be discussed in detail on a number of occasions,
movement of the synaesthetic transference of *usui*, as
we see it, is succinctly set forth here for convenience
of reference.

We maintain that *usui* is basically a dimension-
term which has first transferred to the colour
domain; and from there, has transferred (against
Williams' predicted pattern) to the domain of
touch to denote viscosity of liquid; and from
this domain, has transferred to the domain of
taste as a third-order transfer. The following
diagram maps out the progression of *usui* 's
(incl. *koi* 's) pattern of transference.

```
\[ \begin{array}{c}
\text{colour} \rightarrow \text{USUI/KOI} \\
\downarrow \\
\text{touch} \rightarrow \text{taste} \rightarrow \text{smell} \\
\text{KOI/USUI/KOI} \\
\text{(USUI) KOI} \\
\end{array} \]
```

P.T.O (Contd.)
If there is a set of words that have semantic relationships in a semantic field (where such relationships are described in terms of synonymy, antonymy, hyponymy, etc., Lyons 1977), and if one or more items pattern in another semantic field, then the other items in the first field are available for extension to the second semantic field. Perceived similarity is not necessary. (1978:96).

Admittedly, Lehrer does not stipulate that remaining items from the first field must extend to a second field (i.e. they are available for extension); her hypothesis does, however, make allowance for time lag --- that after one lexical item has transferred to another semantic field, some time may be needed before other items from the first field are transferred to the second --- but even this can no longer be predicted of atsūt, for outside the domain of dimension its 'counterpart', usūt, has forged a long-established relationship of antonymy with the term kōi 'rich (of colour), thick (of consistency), strong (of taste)' in a number of different semantic fields.

(contin.) There will be many readers no doubt who will disagree with our position on usūt's path of transference. We acknowledge that the arguments presented are at times only speculative and that other viewpoints may be just as valid. A.E. Backhouse, for one, questions the possibility of usūt transferring to the colour domain from touch (personal communication). (Of course, there will be others who reject viscosity as belonging to the touch domain...).

The synaesthetic movement of usūt highlights the inherent problems of a diachronic study of the Japanese language without recourse to adequate dictionaries for such purposes.
The opposition between *usui* and *koi* manifests itself in the field of colour and offers a particularly interesting case in that the basic meaning of *koi* would appear to originate in this domain. As a basic colour term, *koi* denotes colour of high saturation, and in this respect is similar in meaning to *fukai* 'deep' (by comparison, *fukai* appears to have favourable connotations, whereas *koi* is neutral): *koi iro* 'deep (rich) colour'; *koi aka* 'deep (rich) red'. Not every colour, however, may be described as *koi* solely on the basis of saturation. Similarly to *fukai* 'deep', *koi* as a colour descriptor tends to be restricted to certain hues and is not normally used to describe 'light' colours such as yellow: *koi kihiro* 'deep (rich) yellow'.

7. Of course, it cannot be said with absolute certainty that a term like *koi* originated in the colour domain. It is quite possible, others may well argue, for *koi* to have originated in the tactile domain (viscosity) and from there, regularly transferred according to Williams' model to the domain of colour. Japanese dictionaries, unfortunately, cannot be relied on for such information (although the first sense cited for *koi* in Koojien is its colour meaning), and one can only offer an hypothesis based on 'appropriate' extension, i.e. that speakers perceive a common quality between richness of colour and consistency, with the most likely direction of transfer (in our view) originating from the colour domain, since perception of consistency also involves *sight* as well as touch. See *koi*, p.74.
The antonym of koi as a colour-term, usui, has synaesthetically transferred from the dimension domain to pattern in the domain of colour to denote colours of low saturation --- colours which would be described as either 'light' or 'pale' in English, depending on the degree of colour present. In this respect, it can be seen that the original terms of dimension usui 'thin' and asai 'shallow' function in the colour domain as near synonyms (asai, as we have seen, tends to be of infrequent usage and somewhat 'specialist-sounding'). In other words, what we find in the colour domain in Japanese to describe saturation of colour is a pair of semantically opposed terms usui-koi, functioning with similar meaning to another semantically opposed pair asai-fukai, except that, as Nishio (1972:88) points out, the former set is more widely used in everyday speech.

Now, the obvious question to be asked is why has usui extended its meaning to pattern as the opposite of koi in the colour domain? The answer to this question, we believe, lies in the semantics of usui and atsui as they function in their basic domain of dimension.

The basic meaning of usui 'thin' is similar to the dimension-term asai 'shallow' in that it denotes a short distance to be measured from the surface of an object. To be more precise, usui denotes the degree to which a flat-surfaced object, such as a book,

8. Asai actually implies direction as well as distance (within an object). Usui, on the other hand, only implies distance (Kunihiro, 1970).
a wall, a piece of paper, etc., extends along its three-dimensional plane (i.e. along the dimension of thickness) --- this degree being of a relatively small amount.

Translated to the colour domain, \textit{usui} 'light/pale' thus denotes colour which is perceived as being 'thinly spread' and therefore much lighter in shade than its focal colour. \textit{Usui} commonly patterns with lexical items denoting a variety of colours, with most of these collocations having a corresponding compound form: \textit{usui midori} 'light/pale green' v's \textit{usumidori} ; \textit{usui fujiiro} 'light/pale violet' v's \textit{usufujiiro} ; \textit{usui kurenai} 'light crimson, pale pink' v's \textit{usukurenai} ; \textit{usui chairo} 'light brown, pale brown (buff)' v's \textit{usuchairo}, etc.

\textit{Usui}'s collocational range is much wider than its antonym \textit{koi}, which tends to exclude colour of high saturation if the focal range of that colour may be designated as 'light'. We contend that the colour term \textit{koi} conveys the idea of 'totally full' --- a lot of colour in one place --- and light colours, such as (focal) yellow, are not perceived as such.

The basic meaning of \textit{atsui} 'thick', on the other hand, is less similar to \textit{fukai} 'deep' (than \textit{usui} is to \textit{asai}) in that there is a necessary limit placed upon the thickness (depth) of the flat-surfaced object. Simply, if the thickness of a flat-surfaced object (such as a book) becomes too great, then the total dimensions of the object take on a new perspective --- the thickness dimension 'becomes' the flat surface from which the depth is measured. \textit{Atsumi} 'thickness', thus, can only be a dimension relative to the surface area of an object, and perhaps this explains why \textit{atsui}
has never extended its meaning to the colour domain, e.g. *atsui iro, *atsui midori — it does not convey for the speaker the appropriate 'depth of richness' of colour (unlike fukai).

It can thus be seen that there is more of a symmetrical dichotomy between asai and fukai (as far as the denotation of specific colours is concerned) than there is between usui and koi. No doubt this is due to the fact that the antonymy between asai and fukai as they pattern in the colour domain carries over from the basic domain of dimension.

**DIMENSION OF TOUCH**

Usurasamui

In accordance with Williams' (1976) predicted pattern of synaesthetic transference, there are no clear-cut cases of dimensional words in Japanese which have transferred directly to the sensory modality of touch. There is, however, the compound usurasamui (usura 'thin' + samui 'cold'), e.g. Kyoo wa usurasamui 'Today is usurasamui', which, at least from a semantic point of view, is worthy of some attention.

The first point to mention about usurasamui is that usura- 'thin' does not exist as a free form, and is not a 'true' dimensional term as such. However,
it can be seen that lexical formation of _usura_- comprises the bound root of the dimensional adjective _usu-i_ 'thin' plus the suffix _-ra_. ° _Samui_ 'cold' is a free-form atmospheric temperature adjective (Kunihiro, 1970:328).

Literally 'thinly cold', _usurasamui_ refers to the ambient temperature such as is experienced with the change of season in Japan from around the end of summer to the beginning of autumn (in fact, this appears to be the only time _usurasamui_ can be used). It thus refers to a sensation of coolness, a coolness so slight as to only be felt on those parts of the unclothed body exposed to the elements, for example, the face and hands. Perhaps the closest English equivalence to _usurasamui_ would be 'chilly', but any one word rendition into English would do this term injustice. ('Chilly' may be used to express the ambient temperature in English regardless of time of day or season).

It is a well-known fact that temperature adjectives in Japanese constitute a "two-dimensional system" depending on whether the thermal sensation is perceived by the whole body or only part thereof, such as the skin (Kunihiro, 1970). ° _Samui_ 'cold' and _suzushii_ 'cool', for example, are terms denoting thermal sensations

---

9. Martin (1988:760) cites _-ra_ as "some sort of etymological suffix", e.g. _tsubu-ra_ 'rotund'. However, according to the Japanese dictionary _Shinmeikai Kokugo Jiten_, 2nd. ed., _usura_ is a "coined" term (i.e. made up).

10. See Kunihiro (1967:96-97) for a somewhat technical discussion on the biological workings behind the bipartite system of temperature adjectives in Japanese.
perceived by the whole body; \textit{tsumetai} 'cool/cold' denoting sensations perceived by a restricted part.\footnote{11}

To cite some examples of usage: For instance, since \textit{samui} 'cold' denotes a sensation throughout the whole body, it is generally used in reference to weather, e.g. \textit{Kyoo wa samui} 'It's cold today', whereas \textit{tsumetai} 'cool/cold' is not possible in such a collocation, e.g. \textit{Kyoo wa tsumetai}.\footnote{12} On the other hand, \textit{tsumetai}, as a term denoting a sensation perceived by the skin (or other delimited areas of the body), occurs in collocation with such nouns as \textit{te} 'hands' and \textit{nomimono} 'drink', i.e. \textit{tsumetai te} 'cold hands', \textit{tsumetai nomimono} 'cool drink' which are not permissible collocants for \textit{samui} e.g. \textit{*samui te}, \textit{*samui nomimono}. Occasionally, however, as Miura (1983:168) notes, \textit{samui} and \textit{tsumetai} may collocate with the same referent, although, of course, with a slight difference in meaning. A \textit{samui kaze} 'cold wind', then, is one that affects the whole body, while a \textit{tsumetai kaze} 'cold wind' affects specific areas only, such as the skin, the face, or the hands.

\footnote{11} The complete temperature systems are as follows: \textit{samui} 'cold'—\textit{suzushii} 'cool'—\textit{atatakai} 'warm' \textit{atsui} (暑) 'hot'; \textit{tsumetai} 'cold/cold'—\textit{nurui} 'lukewarm'—\textit{atatakai} 'warm'—\textit{atsui} (熱) 'hot' (Kunihiro, 1967:22).

\footnote{12} Miura (1983:206) notes an interesting example of the usage of \textit{samui} and \textit{tsumetai}: "When one takes a cold shower, the first sensation perceived by the skin makes one shout \textit{Tsumetai}! If, however, one feels chilled after the shower, one might say, shivering, \textit{Samui}!"
Given such a semantic system for temperature terms in Japanese, one is indeed tempted to question the validity of the above explanation of *usurasamui* as being a term of thermal sensation which only affects a delimited part of the body, i.e. the unclothed areas. If this explanation were accurate, one would expect, then, the 'correct' term to be *usuratsumetai*; but in fact, no such term exists. On the other hand, one could of course think that since *usurasamui* refers to the weather, it does in fact affect the whole body, except that where the body is protected by clothes, the sensation of coolness cannot be felt. This line of argument, however, cannot be supported on the following grounds.

First, while *watashi wa samui* 'I'm cold' is a permissible collocation in Japanese, *watashi wa tsumetai* and *watashi wa usurasamui* 'I'm chilly' are not. This would seem to point to a closer affiliation between *usurasamui* and *tsumetai* (delimited body-part sensation) than between *usurasamui* and *samui* (whole body sensation). Second, the existence of a near synonym, *hadasamui* (*hada* 'skin' + *samui* 'cold') which also refers to a slight coldness felt on the unclothed parts of the body (*watashi wa hadasamui*) suggests that *usurasamui* (and *hadasamui* for that matter) is an anomalous temperature adjective, at least as far as the standard explanation for Japanese temperature adjectives is concerned.
DIMENSION TO TASTE

There are three terms basic to the domain of dimension which pattern in the domain of taste, all 'appearing' (at least from a synchronic perspective) to have irregularly transferred against Williams' predicted movement for synaesthetic adjectives. These terms are *usui*, *fukai* and *sensai*. It will be argued, however, that diachronically speaking, *usui* is not an irregular transfer from the domain of dimension, but is in fact a regular transfer from the domain of touch.

**Usui**

It has already been noted (p. 42) that once outside the basic domain, *usui* 'thin' abandons its opposition with *atsui* 'thick' to pattern antonymously with *koi*, a term basic to the colour domain; and semantic opposition between these two terms is maintained in the domain of taste.13

It is not without reservation, however, that *usui* is postulated as an irregular transfer from the domain of dimension because for one, as we have already seen, *usui* patterns in the domain of touch in the compound *usurasamui* '(lit.) thinly cold' and if one were to

---

13. Of course, this does not mean that *koi*, as a basic colour term, is to be regarded as an irregular transfer to the taste domain. As will be seen in the next section on colour transfers, we maintain that *koi* firstly, and thus irregularly, has transferred to the domain of touch before having regularly transferred (as a second- and third-order transfer) to the domains of taste and smell.
acknowledge the existence of the stem form usu- in usurasamui as an example of an irregular transfer, then it would become necessary to recognise usui in the domain of taste as a regular transfer from the domain of touch. 14

To be sure, to posit usui as an irregular transfer to the taste domain may at first seem the more satisfying conclusion, especially given the fact that Williams has found thin to be the only "unambiguous" exception to the pattern in English. 15 Williams' treatment of thin, however, is not without problems, and it would seem pertinent here to question his contention that, as an incorrect transfer, "the taste-meaning of thin ... [is], for most of us, active and natural" (p.464).

14. There is another explanation. It is possible that dimensional usui has first irregularly extended its meaning to the domain of taste before having (again irregularly) transferred 'back' to the domain of touch. This explanation, however, is less plausible for at least one reason: It involves a somewhat unlikely transfer progression of the order abstract-abstract-concrete (Bloomfield,1933:429).

15. "The only clear-cut, unambiguous violation of the predicted movement is thin to taste; and even that is in a sense anomalously restricted to liquids, unlike any of the other taste-words" (Williams, p.469).
To come straight to the point, thin is not an active taste-term in English --- for any of us. Unlike other synaesthetically transferred terms of taste, such as smooth or lumpy (touch), or crunchy (sound), thin cannot occur in response to the question What does it taste like? *It tastes thin (Backhouse, 1978:8); --- and neither is *It has a thin taste an acceptable sentence in English. In fact, although Williams claims that thin is a taste-term restricted to liquids, even in a frame such as How does that soup taste? It tastes — thin is still an unacceptable occurrence (cf. the tactile taste-terms smooth and lumpy which appear to be semantically acceptable). Indeed, although it is quite possible to have such collocations as thin soup and thin broth in English, surely these phrases involve reference to the consistency of the liquid, and not to the

16. By "taste-term", we are not only referring to terms which describe the limited repertory of taste qualities accounted for by the gustatory modality per se, but also those terms denoting tactile and olfactory qualities associated with the taste experience which have been incorporated into everyday taste description (i.e. we are referring to folk classification rather than scientific description of taste).

17. In actual fact, thin is one of the terms used in the specialised field of wine-tasting to describe the complex concept of 'body' --- the viscosity or weight of wine in the mouth (Lehrer, 1983:10). However, we are not concerned with specialised vocabulary here. This frame is actually based on a similar one used by Williams himself to account for an anomalous exception, faint, to which he concludes that "...faint in faint smell does not really refer to quality-of-taste or smell." No doubt Williams would have done well to apply such frames to other exceptions.
taste?\(^{18}\) (It must be admitted, however, that even in reference to liquids, \textit{thin} is slightly anomalous; \textit{thin liquid} being a less semantically acceptable collocation than \textit{thick liquid} --- See \textit{koi} in the next section for a detailed discussion on viscosity).

From a contrastive point of view, it is interesting to note that (as Williams correctly notes) \textit{usui} is a taste-term in Japanese; with proof of its status being its acceptability as a permissible response to the question \textit{Aji wa doo desu ka?} 'What does it taste like?' --- \textit{Un, chotto usui desu ne} 'Well, it tastes a little \underline{usui}'. Naturally, as its antonym, \textit{koi} also forms an appropriate response: --- \textit{Un, chotto koi desu ne} 'Well, it tastes a little \underline{koi}'. However, of more interest to the speaker of English is the kind of taste-qualities these two terms actually denote.

As a taste-term, \textit{usui} implies that the food or drink to which it refers is lacking in full flavour, e.g. \textit{kono suupu wa usui} 'this soup is bland'; \textit{Amerikan koohii wa usui} 'American coffee is weak'; while \textit{koi} on the other hand, implies a satiated flavour, e.g. \textit{sono koohii wa koi} 'the coffee is strong'; \textit{sono suupu wa koi} 'the soup is strongly-seasoned'.

\(^{18}\) In fact, Williams' apparent confusion over \textit{thin} is borne out in his Japanese data (p.471) where he questions his own analysis as to whether viscosity should be considered a tactile modality. This point, strangely enough, was never raised for his English analysis. Yet, when commenting on the 'three of the four exceptions' in Japanese, Williams not only notes that all three terms denote the viscosity of liquid, but reminds the reader of \textit{thin}, "the only unambiguous exception in English... which behaves similarly"(p.472).
One particular noteworthy point about usui and koi in the taste domain is that apart from the term aji 'taste' itself, these terms only collocate with lexical items denoting liquid, or, less commonly, dishes which contain liquid as part of their make-up, e.g. kono kakigoori wa aji ga koi (lit. As for this shaved-ice treat, its taste is strong) 'This shaved-ice treat's flavouring is strong' (referring to the syrup), kono raamen wa chotto usui ne 'these noodles are a bit bland' (referring to the soup base). It is therefore not possible in Japanese to refer to bland or strong-tasting solid food by the same terms that are used to denote weak/bland or strong-tasting liquid, e.g. kono chizu wa koi 'this cheese is strong', *Nihon no toofu wa usui 'Japanese tofu is bland'.

In-reference to strong-tasting food, it is usual in Japanese to employ the term tsuyoi 'strong', a term of wide-ranging application, e.g. kono chizu wa aji ga tsuyoi 'this cheese is strong (-flavoured)'.

19. It is notable that of the taste-terms weak and strong in English, which may both refer to liquid, it is only the 'marked' antonym of the pair, weak which cannot refer to solid food substances — strong can, e.g. strong (-flavoured) cheese.

20. For example, karada ga tsuyoi 'strong body'; tsuyoi nioi 'strong smell'; tsuyoi kaze 'strong wind'; tsuyoi hikari 'strong light'.
Bland food and food lacking in full flavour, on the other hand, is usually not described simply by the antonym of *tsuyoi* : *yowai* 'weak'; but rather, is described by the terms *tsuyoku-nai* 'not strong' or *aji ga tarinai* 'taste is not enough', where *aji* is often replaced by a noun denoting the specific taste-quality which is insufficiently present, e.g. *kono chiizu no aji wa tsuyoku-nai* 'this cheese is not strong (-flavoured); *sono tsukemono wa aji ga tarinai* 'those pickles are not tasty enough'; *sono tsukemono wa shio ga tarinai* 'those pickles are not salty enough'.

On a final note, while Williams' treatment of *thin* as an "active" taste-term in English appears dubious to say the least, his comment on the peculiar nature of *thin* which, unlike other terms of taste, is anomalously restricted in application to liquid referents (p.469), is a point that cannot be overlooked, for we note this very same tendency with *usui* 'thin' (and *koi* 'thick') in Japanese.

Assuming here for the moment that *thin* (and *thick*) is a taste term in English,22 one plausible hypothesis for both languages as to why *thin* (-*thick*) and *usui-koi* are anomalous taste-terms (i.e. restricted to liquid referents), is that 'originally' (i.e. after having transferred from the domain of dimension for the English terms, or from the domain of colour for *koi* and, we

---

21. *Yowai* 'weak' in Japanese is sometimes used to refer to liquids, i.e. low alcoholic beverages, such as *yowai sake* 'weak saké'.

22. According to the Oxford English Dictionary, apparently *thin* (but not *thick*) did become a taste-term in English (earliest citation date:1377) --- a transfer from dimension (earliest citation date:900); but as I have tried to argue,*thin* is certainly no longer an 'active' taste-term in English. Of further note, the OED makes no mention whatsoever of *thin* or *thick* as touch-terms (quoted in Williams,p.476).
maintain, usui --- as a second-order transfer from the dimensional domain) these terms referred to liquid viscosity in the domain of touch. That is, both English and Japanese recognised a common attribute, or attributes, between dimensional (thickness)-thinness (English)/high saturation-low saturation of colour (Japanese) and the viscosity of liquid (see koi, next section); and since certain liquids are taken in through the mouth, it became possible for these terms to extend their meanings to the taste domain.

It is not difficult to hypothesise why there should exist an associative link between the dimension/colour domain and the tactile domain: Although the 'donor' field (Kittay & Lehrer, 1981) is different for English and Japanese, both dimension and colour belong to the larger domain of sight (in general) --- indeed, liquid viscosity itself would seem to be a borderline case, requiring both the sense of sight as well as touch for its perception. For Japanese, highly viscous liquids appear to have a 'full-of' (satiated, like rich colour?) quality and the term used to denote this quality came to be applied to describe the taste of certain liquids which possessed this 'same' quality (i.e. 'full-of' quality \(\rightarrow\) strong taste); while low-viscosity liquids, appearing to have a 'less-of' (insufficient, like weak colour?) quality, at least when compared to the high-viscosity liquids, came to describe the taste of liquids possessing this 'common' quality (i.e. 'less-of' quality \(\rightarrow\) weak taste).
Correct or not, such an hypothesis at least has
the advantage of offering an explanation as to why these
terms tend to be used in the taste domain with liquids
referents only. It would also seem to explain Williams'
apparent confusion over thin as an 'active' taste-term,
which happens to be a tactile-term perceived in the
mouth as such; but this hardly makes it a taste-term
in English (or even a tactile-taste term for that matter).

Of course, what this hypothesis does not explain
is why thin should cease to be an active taste-term
in English if it were to have regularly transferred
from the domain of touch; its disappearance from the
language being more in line if it were indeed an
irregular transfer from the dimensional field --- as
Williams claims.

On the other hand, if usui were an irregular transfer
from the domain of dimension, as we have reluctantly
posited on the basis of synchrony, its antonymous
opposition with koi, most certainly a regular transfer
from the touch domain, would indeed ensure that usui
be maintained as a taste-term. However, the fact
that usui's (and koi's) function in the taste-domain
is anomalous in that its usage is restricted to liquid
referents (including dishes containing liquid as part
of their make-up) suggests that its probable path of
transference came via the domain of touch, where usage
of usui (and koi) in this domain is restricted to liquid
viscosity.

23. n.b. Williams' claim (p.464) that irregular transfers
are generally not maintained in their 'new' domain.
DIMENSION OF SOUND

Ten Japanese terms of dimension have transferred to the domain of sound. This figure represents more than three times the number of dimensional transfers to the domain of colour, and is reminiscent of the situation of dimensional transfers in English (see Williams, 1976:468). Notable is the fact that most of these transfers have retained their basic semantic opposition in the acoustic field.

Ookii. Chiisai

Among the set of basic terms denoting dimension, ookii 'big' and its antonym chiisai 'small' have by far the widest range of application, and may be used to refer to almost any, if not every, entity of the physical world. It is hard to think of a single object to which these terms could not apply. As Nida (1973:13) notes for English, "big can be used to speak of a big flea and a big elephant".

However, the situation is not as straightforward as one may think. For example, while ookii 'big' may be applied to the physical entity empitsu 'pencil', with ookii empitsu 'big pencil' thus being a semantically acceptable collocation, it is not the case that a pencil three times as long as the average pencil would be referred to as ookii empitsu; but instead, as nagai empitsu 'long pencil'. This, of course, begs the question: What proportions of an object are taken into account when a Japanese speaker refers to something as being ookii or chiisai?
As obvious as the answer may seem, the vocabulary of dimensions in Japanese cannot be taken for granted. As evidence for this, the reader's attention is drawn to the fact that Japanese has two separate words to express what is known in English as dimensional 'thickness'; one, *atsui*, denoting thickness of flat-surfaced objects such as paper, books, walls, etc., e.g. *atsui kabe* 'thick wall'; and *futoi*, a term generally denoting thickness of tube-shaped objects (i.e. the diameter), such as sticks, pipes, tree-trunks, etc., including body parts such as legs, fingers, and arms, e.g. *futoi ashi* 'thick' (i.e. fat) legs' (Kunihiro, 1970:17-18). It is therefore not possible to express 'thick book' in Japanese as *futoi hon* (Tanaka, in press).

Returning now to the question of what proportions of an object are taken into account when referred to as being *ookii* or *chiisai* ---- the answer: All proportions, of either two-dimensional or three-dimensional objects. To cite some examples: *ookii kami* 'big piece of paper'; *ookii kootei* 'big campus'; *chiisai niwa* 'small garden'; *chiisai kooen* 'small park' (two-dimensional entities); *ookii hako* 'big box'; *ookii heya* 'big room'; *chiisai tatemono* 'small building'; *chiisai zoo* 'small elephant' (three-dimensional entities).

Of course, to determine whether something is *ookii* or *chiisai*, one needs to be able to (implicitly) measure the space which the object in question occupies against a given norm; and this norm is usually based upon a
comparison with other entities of the same kind\textsuperscript{24}. For instance, in the sentence \textit{kono ringo wa ookii} 'this apple is big', the yardstick by which \textit{ringo} 'apple' is measured is one's empirical knowledge of the dimensions of 'the average-sized' \textit{ringo}; an \textit{ookii ringo} 'big apple' being one whose dimensions are considered to occupy more space than that of the norm, while the dimensions of a \textit{chiisai ringo} 'small apple' are considered to occupy less.

It is this concept of "all proportions of an entity occupying more (or less) space than its average" which seems to provide the link for a transfer to the acoustic sense modality: Sound which is perceived as having extended all its dimensions (in all directions) so as to occupy a larger area than that which is considered to be within the range of the norm (and therefore can be heard from a greater distance away), or else, is perceived as having the potential to do so (i.e. sound within an enclosure, such as a room), is thus referred to in Japanese as \textit{ookii ookii oto} 'loud sound'. Similarly, sound which is perceived as occupying a space smaller than that which is considered to be within the

\textsuperscript{24} Norms may also be based on comparison with entities of a higher level in a taxonomic hierarchy (Kunihiro, 1970:25-26; Suzuki, 1978:58). Kunihiro notes that the norm for \textit{zoo wa ookii} 'elephants are big' is based on animals in general including humans whereas the norm for \textit{kono zoo wa ookii} is based on elephants in general.
range of the norm is referred to as *chiisai:chiisai oto* 'soft sound'.

Should it have escaped the reader's notice --- and there is no reason why it should not have, since synaesthetic expressions are so commonplace to our language --- one feels obliged to draw attention to the fact that what is expressed in the domain of sound by two basic terms of dimension in Japanese, i.e. *ookii* and *chiisai*, is expressed in English by an original term to the domain, *loud*, and a synaesthetically transferred term from the sense modality of touch, *soft*.

In fact, the fact that English has drawn one of its sound-terms from an 'outside' modality to pattern in the acoustic field as the antonym of *loud* may indeed offer an explanation as to why *loud* and *soft* are not 'symmetrical' opposites:

(i) a. *The music is loud*
   
   b. *The music is soft*

(ii) a. *Turn the music up loud*
        (i.e. turn the volume up to a loud level)
   
   b.* *Turn the music down soft*
        (i.e. turn the volume down to a soft level)

Of note here is that for each of these English sentences, *ookii* and *chiisai* are both acceptable in what would

---

25. Native speakers of English will invariably cite *soft* as the antonym of *loud*. While *loud* is an appropriate gloss for *ookii*, 'soft', however, tends to be a somewhat less appropriate gloss for *chiisai*, as will be borne out in subsequent discussion.
be the equivalent sentences in Japanese, perhaps accountable by the fact that their antonymous relationship has been forged in the field of dimension:

(i) a'. Ongaku no oto wa ookii
    b'. Ongaku no oto wa chiisai

(ii) a'. Ongaku no oto o ookiku shite kudasai
    b'. Ongaku no oto o chiisaku shite kudasai

As transfers to the domain of sound, ookii and chiisai pattern rather freely in collocations with a variety of lexical items denoting sounds; and, as in their basic domain, any sound can theoretically be described as ookii or chiisai. There are, however, a few cases of restricted application where neither of these two terms is semantically acceptable due to the particular nature of the referent. More will be said about this presently.

There are a variety of ways one may divide up the semantic space of sound (see, for example, Lehrer, 1974: 35-41) --- human speech-sounds v's non-human speech sounds; sounds of natural phenomena v's man-made sounds; musical sounds, etc. Although these subsets are somewhat arbitrarily divided, they at least offer a manageable framework from which to examine the collocational possibilities of ookii and chiisai in the acoustic field.

For example, in the subset of human speech-sounds we find: ookii (chiisai) koe 'loud (soft) voice';
ookii (chiisai) hanashigoe 'loud (soft) speaking-voice'; but not *ookii (chiisai) sasayaki (-goe) 'loud (soft) whisper, whispering voice'. A few comments are in order.

Firstly, of note is the fact that the literal readings of ookii koe and chiisai koe have direct-translation counterparts in English: big voice, small (little) voice. Unlike the Japanese however, the English collocations tend to be marked as slightly childish (i.e. speech of children and speech of adults when addressing children). It is not uncommon, therefore, for parents to urge their children to speak in 'big' voices at the school play; or to read of fairytale characters with 'big' voices and 'little' voices --- and even 'big loud' voices and 'little soft' voices, which sound somewhat redundant. For a similar effect in Japanese, phrases such as hijoo ni ooki-na koe 'in a very loud voice', and hijoo ni chiisa-na koe 'in a very soft voice' must be employed.

The second point to note is that while *chiisai sasayaki is not a semantically permissible collocation in Japanese, its English 'equivalent', soft whisper, is. Intuitively, a soft whisper is more than just whispering which is 'not loud'; for if it were, it would surely be tautologous --- like *chiisai sasayaki.

---

26. One is reminded here of other such combinations in children's speech where both the children's and the 'adult' word are juxtaposed: bunny rabbit, pussy cat, puppy dog. Such collocational possibilities do not exist in Japanese: *wan-chan inu.
This example clearly brings out the deviant nature of *soft* (as the antonym of *loud*), which, apart from denoting a particular acoustic quality, also carries pleasant connotations (romantic?), no doubt a legacy of transference from the domain of touch. For this reason, 'soft' is a rather misleading gloss for *chiisai* in the sound domain, which has no connotations of pleasantness, or otherwise.

As acoustic terms, *ookii* and *chiisai* also pattern with a variety of nouns categorised as human non-speech sounds. To cite just a few of these possible collocations: *ookii (chiisai) ibiki* 'loud (soft) snoring'; *ookii (chiisai) kuchibue* 'loud (soft) whistling'; *ookii (chiisai) waraigoe* 'loud (soft) laughing-voice'; *ookii (chiisai) kushami* 'loud (soft) sneezing' etc.

In the subset of musical sounds, *ookii* and *chiisai* pattern in the preferred subject-predicate constructions, rather than modifier-head constructions, e.g. *ongaku no oto ga ookii(chiisai)* 'music is loud ('soft', i.e. not loud)', *piano no oto ga ookii (chiisai)* 'sound of piano is loud ('soft', i.e. not loud). Again, we note that in a sentence such as *ongaku no oto ga chiisai* 'the music is soft', *chiisai* denotes nothing more than a particular sound quality, i.e. the 'non-loud' end of the dimension of loudness; whereas its English counterpart *the music is soft* implies more than just music which is 'not loud', but music which is pleasant to listen to --- perhaps even slightly romantic. Indeed, there is something decidedly strange about
calling heavy-metal music played at low-volume 'soft music' or 'music which is soft'. What is described as 'soft music' in English is commonly expressed in Japanese as *muudo* *ongaku* '(lit.) mood-music'.

It is of further interest to note that the Japanese touch-term *yawarakai* 'soft' also synaesthetically patterns in the domain of sound. The collocational possibilities of *yawarakai* in this domain however, is restricted to the noun *koe* 'voice', e.g. *ano hito no koe wa yawarakai* 'he has a soft voice'. *Yawarakai*, then, cannot be used as a rendition of English 'soft' in other collocations in the acoustic domain, e.g. *yawarakai sasayaki* (-goe) 'soft whisper, (lit.) whispering-voice'; *yawarakai ongaku* 'soft music'.

The subsets of natural sounds, such as *kaminari no oto* 'sound of thunder', *kaze no oto* 'sound of wind', etc., and man-made sounds, such as *densha no oto* 'sound of train', *kane no oto* 'sound of temple bell', etc. offer somewhat of an interesting, though obvious, 'twist', in that when *ookii* and *chiisai* pattern in collocation with many of these nouns, in particular those denoting sounds which are inherently loud, *chiisai* takes on the meaning of 'far' or 'distant'.

For instance, since it is an inherent property of *kaminari* 'thunder' to be *ookii*, the sentence *kaminari no oto ga chiisai* can only mean that the rumbling sound of thunder is in the distance. In fact, in such circumstances, *chiisai* is often replaced by *tooi* 'far'
as a near synonym, e.g. *kaminari no oto ga chiisai (too)'sound of thunder is far' (i.e. distant sound of thunder). Note that in English, *soft cannot be used in such situations: *the thunder is loud, *the thunder is soft.

Takai.Hikui

The dimensional terms *takai 'high' and hikui 'low' function in a semantic relationship of antonymy in their basic domain, and prototypically refer to the vertical distance of an object measured from the ground to its top, e.g. *takai (hikui) yama 'high ('low') mountain', *takai (hikui) tatemono 'tall ('low') building', *takai (hikui) too 'tall ('low') tower'. Since these terms are concerned only with the spacial distance between the top of an object and the ground, objects 'suspended' in the air (i.e. without ground support) may also be referred to as *takai (hikui), e.g. *takai (hikui) tenjoo 'high ('low') ceiling', *takai (hikui) kumo 'high ('low') clouds'. Of interest, the noun *sora 'sky' may also collocate with *takai, i.e. *ado-baruun ga takai (?hikui) *sora ni ukande iru'(lit.) The ad-balloon is floating in the high (?low) sky'.

In view of several of the above glosses for *takai, it can be seen that *takai is not only the

27. Cf. English, where something can only float, fly, etc. 'high in the sky'. *High can never modify sky directly. (But compare: *High heaven to Japanese *takai tengoku).
equivalence of *high* in English but also of *tall* as well. *Tall*, according to Suzuki (1978), differs from *high* in that it is not only concerned with the distance between the top of an object and the ground (i.e. the height), but is also concerned with the proportions of height to width. A *tall tree* or *tall tower*, Suzuki argues, implies that the object in question is disproportionately higher than it is wide --- "Of two people of the same height, the thinner one is more likely to be described as *tall*" (p. 62). It can be seen, then, that Japanese *takai*, compared to English, makes no distinction as far as disproportionate height to width is concerned.

As synaesthetic transfers to the domain of sound, *takai* and *hikui* retain their semantic opposition and typically pattern with the nouns *koe* 'voice' and *oto* 'sound' to denote not only the sound quality of pitch (i.e. whether a sound is 'high' or 'low'), but also, and perhaps surprisingly from the point of view of English, the sound quality of 'loudness':

(1) *Inu wa ningen niwa kikoenai hodo no*  
*Dog TOP people TOP cannot hear extent GEN*  
*takai oto o kiku koto ga dekiru*  
*takai* sound OBJ hear thing SUB can

'Dogs can hear high-pitched (*loud) sounds that humans cannot hear'.

(2) *Terebi no oto o moo sukoshii*  
*Television GEN sound OBJ a little more*  
*takaku shite kudasai*  
*takaku* do please.

'Please turn the television up a little louder'.
While context and knowledge of what particular sound quality a referent of *takai/hikui* is most likely to have often dictates which attribute is implied, some expressions, however, remain ambiguous. A sentence such as *Naomi no koe wa takai* 'Naomi's voice is takai' can therefore either mean that (i) Naomi has a high-pitched voice; or (ii) Naomi has a loud voice. On the other hand, sentences such as *sutereo no oto ga takai* '(lit.) the sound of the stereo is takai' and *ongaku no oto ga takai* '(lit.) the sound of the music is takai' are generally taken to mean, in both cases, that the music is loud, rather than high-pitched. In such contexts it is possible to substitute *takai* with the dimensional term *ookii* 'big' to mean 'loud': *Naomi no koe wa takai=ookii* 'Naomi's voice is loud', *sutereo no oto ga takai=ookii* 'the stereo is loud', *ongaku no oto ga takai=ookii* 'the music is loud'; the dimensional terms *takai* and *ookii* thus functioning synonymously (in certain contexts) in the sound domain.

A few notable points, however, are in order. The first is the fact that when *takai* (*hikui*) collocates with referents denoting human vocal sounds, only *koe* 'voice' (i.e. the 'general cover-term') is acceptable. Specific vocal sounds such as singing, crying, screaming, etc. are not permissible collocations: *takai* (*hikui*) *utagoe* 'takai (*hikui*) singing-voice', *takai* (*hikui*) *nakigoe* 'takai (*hikui*) tearful voice', *takai sakebigoe* 'takai scream'. Secondly, when *takai* (*hikui*) occurs

28. A high-pitched scream in Japanese is *kandakai sakebigoe*. 
in collocation with nouns denoting musical instruments, only the reading of 'high' or 'low' pitch is possible --- loudness must be indicated by the term ookii 'big':

(3) **Sono gakki no oto wa ookikute takai**

That musical GEN sound TOP ookikute takai instrument

'That musical instrument's sound is loud and high-pitched'.

(4) **Sono gakki no oto wa chiisakute takai**

That musical GEN sound TOP chiisakute takai instrument

'(lit.) That musical instrument's sound is low (volume) and high-pitched'.

(5) **Sono gakki no oto wa ookikute hikui**

That musical GEN sound TOP ookikute hikui instrument

'(lit.) That musical instrument's sound is loud and low-pitched'.

Collocations involving HIGH and LOW with referents denoting sound seem so natural that (at least to Japanese and English speakers) their synaesthetic status passes completely unquestioned. One could not imagine, however, any language to manifest an association between vertical spacial dimension and sound whereby high-pitch sound correlates with LOW, and low-pitched sound with HIGH. We contend that this is because the association between HIGH and LOW and sound in language is based on a universally-learned associative synaesthesia: Simply, larger specimens in nature have a tendency to be heavier, thicker, etc., producing sounds of lower pitch, while
smaller specimens in nature are lighter, thinner, etc., and tend to produce sounds of higher pitch. It is also a fact of nature that it is the (higher-pitch producing) lighter specimens which are more likely to resist the forces of gravity, and are thus capable of greater heights than the heavier specimens in nature. Such is the semantic link between dimensional HIGH and high-pitched sound.
SYNAESTHETIC ADJECTIVALS
OF COLOUR

<table>
<thead>
<tr>
<th>COLOUR</th>
<th>DIMENSION</th>
<th>TOUCH</th>
<th>TASTE</th>
<th>SMELL</th>
<th>SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIIROI 'yellow'</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUMIKITTA 'clear'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>KASUKA 'faint'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>AKARUI 'light/bright'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>KURAI 'dark'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>HADE 'loud-coloured'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>HANAYAKA 'bright'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>HAREBARE 'bright'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>HAREYARA 'bright'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>KOI 'rich/deep'</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
EXAMPLES OF INTERSENSORY TRANSFER
FROM THE DOMAIN OF COLOUR

KIROYI
Kimi wa kiiroi.
Egg-yolks are yellow.

→(So) Ano joshigakusei ga kiiroi koe de sakende iru.
That female student is shouting in a shrill voice.

SUMIKITTA
Aki no sora wa sumikitta iru.
The autumn sky is clear.

→(So) Kanojo wa sumikitta koe de utau
She sings in a clear voice.

KAZUKA
Hikari ga empoo ni kasuka ni mieru.
A dim light can be seen in the distance.

→(So) Kane no oto ga kasuka ni kikoeta.
The sound of a temple bell could be faintly heard.

AKARUI
Anata niwa motto akarui iro ga niau.
A brighter colour would suit you better.

→(So) Kanojo wa itsumo akarui koe de henji o suru.
She always replies in a cheerful voice.

KURAI
Sono yooofuku no iro wa kurasugiru.
The colour of those clothes is too dark.

→(So) Kare no koe wa kurai kanji da.
His voice is sullen.
HADE
Kare niwa hade na iro no yoofuku ga niau.
Loud-coloured clothing suits him.

→(So)
Kare wa kabe ni butsukatte hade na oto o tateta.
He bumped into the wall making a conspicuous noise.

HANAYAKA
Hanayaka na iro o shita nettaigyoo
Brightly-coloured (gay) tropical fish

→(So)
Sono heya kara hanayaka na hanashigoe ga kikoete kita
I could hear gay voices coming from the room.

HAREBARE
Kyoo wa harebare to shita tenki.
Today's weather is clear.

→(So)
Kanojo no koe wa harebare to shite ita.
Her voice was cheerful.

HAREYAKA
Kanojo no kimono wa hareyaka na iro o shite iru.
Her kimono is brightly-coloured.

→(So)
Kanojo wa hareyaka na koe de aisateu shita.
She greeted [me] in a cheerful voice.

KOI
Yama no midori wa masumasu koku natte kita.
The green of the mountains became deeper and deeper.

→(To)
Kono nori wa kosugiru.
This glue is too thick.

→(Ta)
Kono suupu wa shio ga kosugiru.
This soup is too strongly seasoned.
Williams' model of intersensory transfer predicts that colour-words may extend their meanings only to the acoustic domain; and indeed, the overwhelming majority of colour terms in Japanese follow this generalization. There is, however, one exception, i.e. \textit{koi}, although its status as a basic colour-term cannot be posited with absolute certainty.

At the synchronic level, \textit{koi} patterns not only in the domain of colour, but also in the domains of touch, taste, and smell; and there can be no doubt the term is an example of a Japanese synaesthetic adjectival. Following the axiom that abstract meanings are more likely to develop from concrete meanings however (Bloomfield, 1933), the probability of \textit{koi} being basic to the domains of taste or smell would hardly seem likely, leaving the colour domain or the tactile domain (i.e. viscosity/consistency) as the probable origin of transfer. We contend that it is the colour domain which is basic, for reasons which will be addressed in our discussion on \textit{koi} below.\footnote{No doubt some readers may prefer to posit \textit{koi} as a term originating in the tactile (i.e. viscosity/consistency) domain. (n.b. Koojien cites the colour-meaning of \textit{koi} as basic).}

\textbf{COLOUR TO TOUCH}

There is only one term in Japanese which has irregularly transferred from the colour domain to the domain of touch: \textit{koi}.
Koi

In its basic domain, *koi* indicates saturation of colour, i.e. the degree to which a colour is free from dilution with white, and may suitably be rendered into English by such adjectives as 'strong', 'deep', or (depending on the hue) 'rich'. Colours which are described as '*koi*', then, are those which are perceived as being 'full' of colour.

What this implies of course, is that, in theory at least, any of the basic colour-terms in Japanese may be referred to as '*koi*'; a colour such as *koi kiiro* 'strong (deep) yellow', for instance, would denote a shade of yellow which is perceived as one containing the maximum amount of colour possible for its particular hue. However, like its near synonym *fukai* 'deep', a synaesthetically transferred colour-term from the domain of dimension, not all basic hues in Japanese are usually referred to as '*koi*'; and *kiiro* 'yellow' is one of them. In fact, it would seem to be the case that *koi* (and *fukai*) is not normally used to refer to colours whose focal point is generally regarded as being *akarui* 'light' (*aka* 'red' being the borderline exception), because, as Wierzbicka (in press) points out, "light colours look as if there [is not] much colour in them".

Regardless of what particular hue may or may not be described as *koi*, we argue that 'saturation' itself is the key link which has enabled *koi* to extend its meaning from the domain of colour to denote viscosity (or consistency) of liquid in the tactile domain: For
just as a *koi iro* 'strong (deep/rich) colour' is perceived as being 'undiluted' (by the colour *white*) and hence 'looks' concentrated, *koi ekitai* 'thick liquid' is also perceived as being undiluted (by water), and hence 'feels' concentrated (i.e. thick) to the touch.

Actually, 'viscosity' (and 'consistency') is a difficult concept to categorise, and arguably belongs just as much to the domain of sight as it does to the tactile domain; in most cases, it is enough just to perceive liquids (in either their flowing or stationary state) via the sense of sight to know whether they are of high viscosity/consistency without having to bring tactile perception into play.

The obvious question to be asked now is: How can one tell by sense of sight alone that a liquid in its stationary state is of high consistency? — We maintain that, in many cases, the colour of a liquid combined with the dimension of transparency-opaqueness is often all that is needed to convey the degree to which a liquid is perceived of as being 'full' of its own particular 'make-up' (i.e. its consistency or viscosity). In general, low-viscosity liquids tend towards the colourless and transparent, while high-viscosity liquids tend towards saturation of colour and opaqueness: The link between *koi* as a colour term and *koi* as it patterns in the tactile domain now becomes clear.

This explanation for *koi*, of course, does not hold for *thick* as a tactile-term\(^2\) in English however, since

\(^2\) Neither Williams, nor the Oxford English Dictionary from which he cites, makes mention of *thick* (or *thin*) as touch-terms.
thick has synaesthetically transferred from the domain of dimension. In fact, as an original dimensional transfer to the tactile domain, an explanation as to the semantic link between thick in these two domains is somewhat less forthcoming, and one is reminded here of Bierwisch's (1967:33) comment on dick 'thick' and dünn 'thin' in German:

An adequate characterization of dick and dünn is most difficult. Although dick seems to have two completely different meanings in the two sentences Die Tür ist dick and Die Suppe ist dick, these meanings are obviously related somehow. But for the time being I know of no plausible way to represent this relationship. [emphasis mine]

To be sure, the link between thick as a dimensional term and thick as a tactile-term intuitively exists (and presumably it is the same link that is intuitively present for Bierwisch in German), but just what that common attribute between dimensional thickness and liquid viscosity is, appears to elude words. What is certain, however, is that in English and Japanese (-and, it would seem, German) it is only the thickness end of the dimension, rather than thinness, which tends to actively function in the tactile domain.

It is of particular interest to note that the antonym of koi in the colour domain, usui 'light/weak (colour)', a synaesthetic transfer from the domain of dimension (with basic meaning 'thin'), is only 'semi-operative' as a transfer in the domain of touch (to denote liquid consistency), and this very same tendency may be observed with thin in English. The collocation thin liquid
(and \( ? \) usui ekitai) is decidedly less semantically acceptable than thick liquid (and koi ekitai); and that two historically unrelated languages such as Japanese and English should exhibit the same tendency indeed calls for explanation.

Presumably, in Japanese and English (and most likely in a great many other languages) there is little need to qualify non-viscous liquid as usui or thin, since liquid, generally, is 'runny'. It is only high-viscosity liquid which needs qualification, since liquid which does not easily flow is not the normal state-of-affairs; and to denote this 'atypical' condition, Japanese and English have responded by "appropriate extension" (Brown, et al., 1957) from two different sensory domains --- the domain of colour (Japanese) and the domain of dimension (English).

There are times, however, when high viscosity is required of liquid, such as in a cake mixture, and if the desired consistency is not met, it is necessary to draw attention to this fact: the mixture is runny; the mixture is thin; kiji ga sara-sara shite iru\(^3\); kiji ga usui (the most commonly used terms being runny and sara-sara). On the other hand, there are times when viscous liquid is required to be less concentrated, such as in the case of paint, where it now becomes necessary to state: the paint needs to be thinner; kono penki wa motto usumeru hitsuyoo ga aru.

It will be noticed that in both of the above situations thin and usui are either implicitly or explicitly being

3. Some native speakers, it would seem, do not use sara-sara shite iru in this sense.
contrasted with *thick* and *koi* respectively, and it would seem that this is the only time these terms are required to function in the tactile domain (i.e. to denote liquid consistency). This situation, of course, supports Lehrer's (1974, 1978:96) hypothesis on semantic field transfers --- the antonym of *thick* in the dimensional domain, *thin*, retains its antonymy to *thick* in the tactile domain (i.e. when needed for contrastive purposes); while *usui* the antonym of *koi* in the colour domain functions (when needed) as the antonym of *koi* in the tactile domain.

That *usui* (i) patterns as a dimensional transfer in the domain of colour as the antonym of *koi*; and that (ii) *koi* has transferred directly to the domain of touch while retaining *usui* as its antonym (when needed), lends credence to our hypothesis (see p.43) that *usui* has regularly transferred to the domain of touch from colour, rather than having irregularly transferred from the domain of dimension, as is the case for *thin* in English.

**COLOUR TO TASTE**

The colour-term *koi* patterns in the domain of taste, and at first blush -- at least at the synchronic level --- would appear to be an irregular transference against Williams' model. However, as we have seen in the previous section, *koi* also patterns in the domain of touch, occurring as an irregular transfer from the colour domain to denote liquid viscosity; and thus, its occurrence in the domain of taste, we argue, actually represents an example of a regular second-order transfer from the tactile domain. Diachronically then, a touch-to-taste transfer, *koi* is dealt with in this section as a matter of convenience.
In the domain of taste, koi patterns to denote strong flavour of liquid foods such as koohi 'coffee', suupu 'soup, etc., or dishes which contain a liquid base as part of their makeup, e.g. raamen 'noodles' etc., and it is the fact that koi tends to denote only liquids in this domain which presents the strongest evidence that koi has extended its meaning from the domain of touch where it patterns to denote viscosity/consistency of liquid.

From the denotation of 'thick' liquid substances (which often invoke an image of being sticky to the touch), it is not difficult to see how koi as a tactile term has extended its meaning to pattern in the taste domain. In fact, the relationship between these two senses of koi is so closely connected that the use of koi to refer to some liquids is ambiguous.

Koi novi 'koi glue' and koi penki 'koi paint', for example, clearly refer to thick (i.e. high viscosity) glue and paint (which may be thinned by the addition of 'runny' liquid) by virtue of the fact that, above all, they are inconsumable liquids; and koi koohi clearly denotes strong coffee (which may be weakened by the addition of 'runny' liquid). However, this does not mean to say that only free-flowing (i.e. low viscosity) consumable liquids, such as coffee may be referred to as koi in the taste sense of the term, or that 'sticky' semi-liquids are always referred to as koi in the tactile sense.

4. See also the discussion on usui, p. 52.
In chemistry, for example, a beaker of sulphuric acid may be referred to as koi in the 'taste' sense of the term, although it is of low-viscosity/thin consistency. A sentence such as kono ryuusan no noodo wa takai 'This sulphuric acid is of high density' (noodo wa takai = koi) implies that the sulphur content is of high concentration. Presumably, koi in its taste sense must be used in such circumstances because if one were to drink (i.e. taste) the sulphuric acid (although not recommended!) it would taste as if the sulphur content were more concentrated than the norm. (Of course, one would have had to have drunk this acid on several occasions to be able to decide what the 'norm' for sulphuric acid was). It is just that, unlike coffee which is drinkable (hence 'tasteable'!), sulphuric acid requires scientific analysis to reveal its concentration level. Therefore, any liquid substance (consumable or otherwise) which can be described as koi in Japanese, but which is not of high viscosity, necessarily forces the interpretation of being of high-concentration (testable by the sense of taste or scientific analysis; cf. 'viscosity/consistency' koi which is perceived by the sense of sight and touch).

The link between koi as a tactile-term and koi as a taste-term is rather natural, although consistency and concentration do not mean the same thing, e.g. thick soup does not necessarily mean strong(-ly - seasoned) soup (i.e. consistency involves the actual 'makeup' of a liquid, while concentration is a separate issue, and involves the degree to which extra qualities apart from 'makeup' are present).
Moreover, just as low-viscosity inconsumable liquids may be referred to as *koi* in the taste sense, it is also possible to refer to viscous liquid ('tactile' *koi*), which is consumable, as strong-tasting ('taste' *koi*), and it is here where the ambiquity between the two senses of the term *kot* occurs. In particular, honey springs to mind as being able to possess both qualities of (tactile and gustatory) at the same time. Thus, the sentence *kono hachimitsu wa koi* 'this honey is koi' means either that the honey is thick (i.e. of high viscosity) or that it has a strong taste, although, of course, 'tactile' *koi* is the natural interpretation.

**COLOUR TO HEARING**

*Kiiro*[^5]

*Kiiro* 'yellow' is a basic colour term in Japanese belonging to the native Japanese vocabulary of colour (Stanlaw, 1987:88) and, unlike *yellow* in English which has 'secondary' meanings of jealousy and cowardice, is free of any 'colour symbolic' associations. However, due to Western influence, it seems that there are some Japanese, especially those of the younger generation, who consider *kiiroi bara* 'yellow roses' to symbolize the concept jealousy (i.e. *hanakotoba* 'the language of flowers').

[^5]: As the name of a colour, the normal form *kiiro* must be used. *Kiiroi* is the adjectival form.
Perhaps surprisingly, at least from the English speaker's point of view, the prototypical referent of *kiiro* for the Japanese is not the sun (See Wierzbicka, in press, for her comments on *yellow*). The sun is *aka* 'red', and Japanese children's coloured drawings invariably reflect this association. After all, what other colour could one expect from a people whose national flag depicts a red sun on a white background?\(^6\)

As further evidence that the Japanese do not regard the sun as being yellow, there is a common expression in Japanese *taiyoo ga kiiroku mieru* '(I'm) fatigued' (lit. '(I) see the sun as yellow') meaning that a person who sees the sun as *kiiro*, i.e. is unable to see the sun as its 'proper' colour (*aka*), is a person who must be extremely fatigued.

In fact, it would seem that the Japanese speaker is hard pressed to supply a prototypical referent for the colour *kiiro*. There does, however, appear to be a conceptual link between the yolk of an egg and *kiirosa* 'yellowness' (i.e. when asked what colour *kimi* 'egg yolk' makes one think of, native speakers will reply:

\(^6\) The Japanese flag actually depicts a 'rising-sun' --- the sun as it first appears over the horizon.

Satake Akihiro, a scholar of the *Man'yooshuu* 'Anthology of a Myriad Leaves' (i.e. twenty books consisting of about 4,500 poems, dating from the time of Emperor Nintoku (313-399) to that of the Emperor Junnin (758-764) of the later Nara period), believes that *aka* 'red' is derived from *akarui* 'bright' (quoted from Kindaichi,1978:206). The word *aka* is not synchronically analysable however, perhaps clouded by the fact that *aka* and *akarui* are written with different Chinese characters.
"kiro"\textsuperscript{7}, although egg-yold tends to be perceived more of as \textit{orenji-iro} 'orange colour' rather than \textit{kiro} 'yellow'.

As a transfer to the domain of sound, the collocational possibilities of \textit{kiro} is restricted to the noun \textit{koe} 'voice', and takes on the meaning 'high-pitched': \textit{kiroi koe} 'shrill voice'. Not any high-pitched voice can be referred to as \textit{kiroi koe} however --- for instance, the voice of a cry of terror or pain; but rather, \textit{kiroi koe} denotes a type of high-pitched voice particularly associated with teenage (especially female) merriment (e.g. young girls at a pop concert).

The status of \textit{kiro} as a synaesthetic transfer from the colour domain to the domain of sound is of particular interest because it is able to offer an explanation for the phenomenon based on both of the major theories of synaesthesia (Marks,1975:320-327):

(i) that synaesthesia is innate; reflecting intrinsic sensory correspondences between different modalities of sensory experience.

(ii) that synaesthesia is associative; learned from experiences which may be considered universal; or learned from experience with the arbitrary linkages that happen to be present in one's culture.

\textsuperscript{7} Native speakers' responses may be influenced by the fact that the word \textit{kimi} 'yolk' in Japanese is semantically transparent:\textit{ki} 'yellow' + \textit{mi} 'body'. Interestingly, 'faeces' for the Japanese is also regarded as \textit{kiro}. 
Both points of view will be considered as we turn to examine *kiiro* as a synaesthetic transfer.

**Kiiroi Koe as an Intrinsic Sensory Correspondence.**

If there were some innate intersensory correspondence between the colour *kiiro* and high-pitched sound, one could expect this synaesthetic relation to be expressed through language (i.e. verbal synaesthesia); but of the twenty-nine languages Kikuchi and Lichtenberk (1983) have examined for semantic extension in their colour lexicons, only the Japanese language is seen to possess such an expression of sensory unity, i.e. *kiiroi koe*. This does not mean, though, that a hypothesis based on 'intrinsic appropriateness' between yellow and high pitch should be dismissed: For as Hartshorne (1934:59) notes "There is one experience of intersensory resemblance which is peculiarly obvious to everyone. This is the intuiting of the 'brightness' of high-pitched sounds".

Indeed, the literature on 'coloured-hearing' synaesthesia abounds with correspondences between brightness and high pitch, be it the brightness of high-pitched vowels, musical notes or musical instruments. Marks (1975), presenting his research on the brightness of colour linked synaesthetically to vowel sounds, sums up his results:

Yellowness was most often associated with tones of high frequency, blueness with tones of low frequency. Extrapolation of this outcome to the synaesthetic colours of vowels would suggest that sound frequency, probably frequency of the second formant, should predict yellowness. (p.311).
Although Marks' results were obtained from genuine synaesthetes, where high-pitched sounds actually induced visual images of yellowness, it must be remembered that non-synaesthetes have similar experiences with 'pitch brightness', and this is often exposed in language via metaphor:

Most synaesthetic metaphors that are perceived immediately as appropriate (and maybe even some that are not) derive largely from the same primordial unity of the senses that expresses itself in sensory synaesthesia. Such metaphors typically convey intrinsic correspondences through dimensions like brightness or affect that are common to many or all sense modalities. (Marks, 1978:213)

Commenting on a particular metaphor taken from one of Conrad Aiken's poems, "shrill bells of silver", Marks (1978:213) notes: "There are relatively few colours that may be deemed proper to go with shrill sounds. Silver stands out. Consider, by way of comparison, shrill blue, shrill black, or worse yet, shrill purple". Indeed, although 'shrill yellow' is not specifically mentioned, one intuitively feels certain that its inclusion as an example of metaphoric 'appropriateness' would pass unquestioned.

Concerning partial synaesthetic metaphors, such as loud colours and bright notes, which identify the sensory quality of only a single modality, Marks (1978:214) has the following to say:

8. "The House of Dust"
Indeed, we may infer that the use of partial, intrinsic metaphors find its justification in the existence of natural intermodal correspondences. It is presumably because people can comprehend what bright or silvery sounds are -- that they are high pitched, relatively loud (in the case of bright sounds), perhaps staccato -- that these phrases have communicative value.

What we may conclude by all this, then, is that the innate correspondence between brightness and high pitch, which does seem to exist among synaesthetes and non-synaesthetes alike, may manifest in language through metaphor (including 'partial' metaphor), and, that this intersensory connection surfaces in the Japanese language by the designation of an actual hue perceived as 'bright', i.e. kiiro, while in English on the other hand, the term bright itself is employed to express the same synaesthetic correspondence: bright sound, bright note^9.

However, this indeed can only be one explanation for kiiroi koe. The colour 'white', for instance, may be regarded as a colour of extreme brilliance, yet in French, voix blanche means a 'toneless voice' (Kikuchi & Lichtenberk, 1983:43) -- not the expected meaning of 'extremely high-pitched' -- and cannot, therefore, be predicted by a theory of innate intersensory correspondence.

On the other hand, it is difficult to accept the fact that the association between blanche and 'nothingness'

^9. Of particular note, this situation in English has interesting twist in German: Visually 'bright' in German, hell, originally meant auditionally 'high-pitched' (Hartshorne, 1934:61, fn.24).
(87)

(i.e. 'toneless' when applied to voice quality)\(^{10}\) is purely culture-specific --- the association between 'white' (i.e. 'colourless') and 'nothingness' is certainly not a remote concept for the English-speaking culture, and most probably for many others (if not perhaps all) --- which once again points to a theory based on innate, or possibly universally learned experiences, rather than on cultural associations. Moreover, there have been a number of studies done under the heading of 'synaesthesia' on the associations between colours and emotions (see, for example, Odbert, Karwoski & Eckerson, 1942; Osgood, 1960; D'Andrande & Egan, 1974) which have revealed consistent results between distinct culture groups, that would seem to give credence to a theory based on some variety of synaesthetic innateness.

In colour-emotion synaesthesia, the colour 'yellow' has been associated with 'joy' and 'gaiety' (Hartshorne, 1934), 'playfulness' (Odbert, \textit{et al.}, 1942), and 'cheerfulness' (D'Andrande, \textit{et al.}, 1974). This fits in well with what has already been said about \textit{kiiroi koe} --- i.e. that it is a type of high-pitched voice particularly associated with teenage (girls') merriment. It should also be noted however that, when applied to women's voices, \textit{kiiroi koe} is used disparagingly to imply that women with such voices are behaving immaturity. It is interesting to note here Hartshorne's (1934:233) comments on his own synaesthetic experience:

\(^{10}\) I.e. \textit{blanche} 'white': devoid of hue --- devoid of tone.
...The most joyous notes would accordingly be yellow-like and high...The merriest sounds must be such high-pitched ones as those of children's or women's laughter...

It would seem obvious by now that the status of kiiroi koe has become blurred. It is no longer possible to say whether kiiroi (koe) is associated with 'gaiety' by some underlying innate (colour-emotion) synaesthesia, or whether it is a universally learned (i.e. associative) synaesthesia that is involved, since it is at the height of gaiety that children and women's voices are at their heighest pitch.

Kiiroi Koe as a (Culturally) Associative Sensory Correspondence. Although not explicitly stated, it can be seen from the previous discussion that kiiroi koe hints at immaturity. In Japanese, immaturity and inexperience is usually associated with the colour ao 'green', as it is in many languages of the world, e.g. ao-otoko 'an immature, inexperienced youth'; shiri ga mada aoi '(lit.) his backside is still green', i.e. '(Literally) he is still inexperienced' (Kikuchi & Lichtenberk, 1983:56). There is one expression in Japanese, however, which expresses 'immaturity' by the colour kiiro.

Literally translated as 'yellow beak', the expression kuchibashi ga kiiroi is commonly used to refer to a person who is 'young and inexperienced' 11, and this no doubt has arisen from an association with young birds and the

11. Anna Wierzbicka informs me that Polish has the same expression.
like, such as chicks, which have *kiiroi kuchibashi* 'yellow beaks' when they are young.

Young birds and chicks also make a continuous high-pitched chirping noise, and it is possible that the colour of their beaks (apart from being associated with human youth and inexperience) came to be associated with high-pitched voices, which in nature tends to be correlated with youth. Such an hypothesis, of course, supports a theory of synaesthesia based on experienced conjunctions in one's culture and implies a language-idiosyncratic development.

Akarui.Kurai

We start our account of *akarui* 'bright, light' and its antonym *kurai* 'dark' by quoting a relevant remark from Traugott (1986) concerning the regularity of semantic change:

"...Another example of regular change within the lexicon is that in many languages the words for brightness of colour turn into words for intellectual ability, as in *bright, dull*..." (p. 155)

To examine each of these terms separately before comparing them with their Japanese equivalents: We note that *bright* in English, an original term to the colour domain, can refer to either colours in particular, e.g. *bright red*, or to brightness (of light) in general, e.g. *the sun's bright rays*, and has actually extended
its meaning to other subdomains of personal attributes besides the mental phenomenon of intellect —— bright may refer to someone who is cheerful or vivacious, e.g. a bright face or to a voice which is clear and distinct.

We also note that dull is not an original colour-term in English, but is a word which has transferred to the colour (and sound) domain from the domain of touch, e.g. dull colour, to pattern as the antonym of bright. However, whereas bright may refer to either the ambience or to an object (either natural or artificial) emitting light, e.g. It's bright outside today!, the sun's bright light, the bright lights of the city, the term dull tends to refer to the ambience, and hence, is commonly used in reference to the weather, e.g. It's a pretty dull day today! Artificial light which is not bright, for example in a badly illuminated room, tends to be called 'dim' in English rather than 'dull', especially when referring to the actual object emitting the light: the restaurant's lighting is dim, the restaurant's lighting is dull12, although the general illumination of the room itself may be referred to as either dull or dim. In a similar manner to bright, however, dull has extended its meaning to the domain of personal attributes to denote intellectual ability (or rather lack thereof!) as well as to refer to a person's lack of vivacity.

12. The semantics of dull and dim has not been given the close attention it obviously deserves. We can be certain, however, that these two terms are not synonyms, for it is only dull which can be used in reference to weather. Cf. the sentence *It's a pretty dim day today! which is at least suggestive of the fact that dim is not commonly used to refer to natural light.
In Japanese, on the other hand, the term *akarui* 'bright' is also an original colour-word like *bright* in English, and may refer to either colours, e.g. *akarui iro* 'bright colour', *akarui aka* 'bright red', or to brightness of light, e.g. *sono dentoo wa akarui* 'the electric light is bright'. Unlike its English equivalent however (—and "in many languages"), *akarui* is not an example of a word for brightness of colour which has "turn[ed] into [a] word[ ] for intellectual ability". A quick-witted or clever child, for example, would never be referred to as an *akarui ko* 'bright child' with such intended meaning. Instead, *akarui* in Japanese may only refer to someone who is cheerful or vivacious, or to a voice which reflects this mood.

As a basic tactile term which has transferred to the colour domain, at first blush, *nibui* would seem to be the 'perfect equivalent' of 'dull' in Japanese. Unlike its English counterpart however, *nibui* is not commonly used in the domain of colour to denote 'non-brightness' of actual hue (non-brightness in colour may aptly be expressed by the adjectival *kusunda*, e.g. *kusunda iro* 'dull colour', *kusunda aka* 'dull red') — or even non-brightness *per se*: We note the low frequency of usage with the collocations *nibui hikari* 'dull (dim) light' and *nibui iro* 'dull colour'. Outside of sensory experience, *nibui* parallels its English equivalent by also functioning as a term of personal attribute; *nibui* may denote intellectual ability as in *atama ga nibui* '(lit.) head is dull', i.e. he is dull witted.

To reiterate the main points of the above discussion: In the English colour domain, *bright* and *dull* --- *dull*
being a synaesthetic adjective basic to the touch domain --- function antonymously, and this opposition is maintained in the field of intellectual ability. As colour-terms, however, depending on the referent, *dim* rather than *dull* is the preferred antonym of *bright*, e.g. *bright colour vs dull colour; bright lighting vs dim lighting.*

In the Japanese colour domain we find *akarui* 'bright' and *nibui* 'dull', --- *nibui* being a synaesthetic adjective basic to the touch domain --- with both terms referring to colour or brightness of light; but where collocations involving *nibui* decidedly having a lower frequency of usage. *Akarui* patterns in the domain of personal attributes to denote 'cheerfulness'; and only *nibui* has transferred to the field of intellectual ability. (Intellectual 'brightness' is expressed simply as *atama ga ii* '(lit.) head is good')13. The obvious asymmetry that exists between *akarui* and *nibui*, unlike their English 'counterparts' *bright* and *dull*, is accountable by the fact that *akarui* and *nibui* are not opposites. The antonym of *akarui* is *kurai*, a term also basic to the colour domain:

(1) *Heya wa akarui desu ka?*  
room TOP light/bright COP QU  
'Is your room bright?'

13. The 'true' opposite of *atama ga ii* is *atama ga warui* '(lit.) head is bad'. Since *nibui* is generally used to refer to a person who is 'slow on the uptake' or 'insensitive', its use in denoting intellectual ability seems to be euphemistic. It is 'softer' to say "*atama ga chotto nibui*" '(lit.) head is a little dull' than it is to say "*atama ga warui*".
In their basic domain of colour, **akarui** and **kurai** not only refer to brightness/darkness of colour, but also to brightness (or lightness)/darkness of light in general. Of particular note is the fact that **akarui** may be rendered into English as either 'bright' or 'light'; but **akarui iro** must always be rendered as 'bright colour' (never 'light colour')\(^1\), while **akarui** in the sense of daytime 'lightness' (as opposed to nighttime 'darkness') may be rendered into English as either 'light' or 'bright', depending on the context.

We are in agreement with Wierzbicka's (in press) comments on the terms **light** and **dark** in English as being applicable to **akarui** and **kurai** in Japanese:

"I believe that the clue to the semantics of dark and light lies in the concept of seeing, and that the prototypical use of these words has to do not with any objects out with the ambient. We say, above all:

It was (already) dark
It was (still) light."

\(^{14}\) See Ch.4 for a full discussion on **nibui**.
\(^{15}\) As we have already seen, 'light colour' in Japanese is **usui iro**.
Indeed, *akarui* and *kurai* in Japanese, first and foremost, refer to the ambient: *sora ga akaruku natte kita* 'It's getting light'; *taiyoo ga akaruku kagayatte iru* 'The sun is shining brightly'; *sora ga kuraku natte kita* 'It's getting dark'. One's attention is drawn here to the fact that a collocation such as *akarui heya* 'akarui room', for example, whether illuminated by natural or artificial light, tends to be ambiguous (at least for English speakers!) as to whether the room is light or bright. To be sure, it is only a matter of degree of illuminosity, but a distinction which is not made in Japanese. On the other hand, when it comes to a badly-illuminated room, whether naturally or artificially lit, a distinction is (or can be) made concerning the degree of illuminosity. A room which is not so *kurai* may be described as *usugurai* 'dull, dim' (*usu*—'thin' + *kurai*—'dark'), e.g. *usugurai heya* 'a badly illuminated/dimly-lit room'.

It is of interest to note that *usugurai* 'dull, dim', particularly when used to refer to natural light, patterns in opposition with *usuakarui* (*usu*—'thin' + *akarui*—'light'). Although seemingly similar in that they may refer to exactly the same degree of brightness, these terms are not interchangeable. *Usugurai* may only be used to refer to that period of time after *kurasa* 'darkness' and before the onset of total *akarusa* 'light' (i.e. sunrise); while *usuakarui* refers to the period after *akarusa* but before complete *kurasa* (i.e. sunset):

```
  usukurai
akarui (light) ---------kurai (dark)
sunrise

usuakarui
  
  kurai (dark) ---------akarui (light)
sunset
```
The following remarks about *light* and *dark* from Wierzbicka (in press) however, would not seem applicable to Japanese, especially as far as *akarui* 'bright, light' is concerned:

Sentences including expressions such as 'a dark ball' or 'a light flower' seem neither as common or as natural as sentences with the words *dark* or *light* referring to the ambient... I do not think that the words *dark* and *light* (as colour designations) are learnt by ostension, with reference to some objects which provide models of 'a dark colour' or 'light colour'. If there is a model of 'darkness' or a model of 'lightness', it is to be found in the darkness of the night, or in the light of the light of the day.

Indeed, use of *akarui* and *kurai* in such collocations as *akarui iro* and *kurai iro* is not as 'natural' as when these terms are used to refer to the ambience. However, as we have already seen *akarui iro* 'akarui colour' denotes only brightness and not lightness of colour; and hence, we would not expect a model of 'a light colour' in Japanese to be provided by "the light of the day".  

The conceptual link between *akarui* referring to the ambience and *akarui* referring to colour would seem to lie in the concept of the sun (note the possible etymological association between *aka* 'red', the colour the Japanese believe the sun to be, and *akarui* 'bright').

16. Perhaps a more suitable model for dark and light colours in Japanese may be found in the deepness and shallowness of the ocean.

17. See note 6, this chapter.
Although the sun emits light, the sun itself is perceived as more than 'light' — it is 'bright', and it is the sun's brightness (akarusa) rather than the light (akarusa) it emits which has come to be associated with akarui colours. After all, bright colours not only reflect light, but are highly saturated and 'intense' colours — in short, are extremely visible to the eye — like the sun.

It is also possible, as a hypothesis, that the semantic development of kurai iro 'dark (sombre) colours' might have been determined by its opposition with the established akarui iro 'bright colours'; that is, fully saturated colours lacking in brightness are perceived as 'dull', and such dimensions of colour tend to be 'dark'.

*************
聴覚

SENSE OF HEARING
SYNAESTHETIC ADJECTIVALS
OF SOUND

<table>
<thead>
<tr>
<th>SOUND</th>
<th>DIMENSION</th>
<th>COLOUR</th>
<th>TOUCH</th>
<th>TASTE</th>
<th>SMELL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAWAGASHII 'noisy'</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHIZUKA 'quiet'</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOOZOOSHII 'noisy'</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
EXAMPLES OF INTERSENSORY TRANSFERS
FROM THE DOMAIN OF SOUND

SAWAGASHII

It's terribly noisy at the front of the house.

Kare no nekutai wa itsumo sawagashii iro da.
He always wears loud coloured ties.

SHIZUKA

I would like quieter surroundings.

Mizuumi wa shizuka na iro o tataete iru.
The lake is brimming with quiet colour.

SOOZOOSHII

Don't make a racket in the middle of the night!

Kanojo wa soozooshii iroai no fuku ga suki da.
She likes loud shades of clothing.
CHAPTER THREE

SENSE OF HEARING

As predicted by Williams' model of synaesthetic transfer movement, sound-words in Japanese transfer only to the domain of colour; and as with sound-words in English, the percentage of sound-to-colour transference is of a much lower order than of colour-to-sound transference. This is surely not coincidental, and no doubt has its basis in innate synaesthesia, where 'coloured-hearing' is by far the more prevalent intersensory path, rather than vice-versa.

SOUND TO COLOUR

There are three synaesthetic adjectivals in Japanese which are first-order transfers to the colour domain: shizuka, savagashii, and soozooshii; these terms representing one third of the number of colour-to-sound transferences in Japanese.

Shizuka

As a term basic to the domain of sound shizuka conveys the meaning of both 'quiet' and 'silent':

1. As Lehrer (1974) notes, quiet in English is ambiguous. "A sentence like The mother quieted the children may imply that she caused them to be completely silent or just less noisy...[whereas] silent semantically impl[ies] a negative element, 'no sound'."(p.37)
Outside TOP quiet/silent and nothing kikoenakatta. can be heard+Past

'It was quiet (silent) outside. Nothing could be heard'.

Outside TOP quiet and crickets no nakigoe no hoka wa nanimo kikoenakatta. GEN cry GEN besides TOP nothing can be heard +Past

'It was quiet (*silent) outside. Only the ringing of crickets could be heard'.

A shizuka na oto 'shizuka na sound' however, may only refer to sound of low volume (i.e. a 'quiet' sound), for the obvious reason that the meaning of 'silent' here (i.e. a 'silent' sound) is semantically anomalous.

Part of the meaning of shizuka, then, as it patterns in the sound domain, may be seen to function synonymously with chiisai, a synaesthetically transferred term from the domain of dimension, e.g. oto ga chiisai 'sound is (lit.) small' (i.e. volume is low), which in turn, functions in an antonymous relationship with ookii, also a synaesthetically transferred term from the dimension domain, e.g. oto ga ookii 'sound is (lit.) big' (i.e. volume is high).

Apart from chiisai however, a near synonym of shizuka is rather difficult to find. Otonashii

2. This collocation may not be acceptable to all Japanese speakers.
'gentle, mild, meek', a term originating in the domain of personality attributes\(^3\), may at first blush appear a good candidate. *Otonashii iro* 'quiet colour' is an already well-established collocation in Japanese, and a transfer to the sound domain from the colour domain is highly possible. *Otonashii oto* 'quiet sound', however, does not seem to exist as a set collocation (although informants agree on its acceptability), but it has obvious potential as a future collocation in the Japanese language.

Antonymous with *shizuka* in its basic domain are two adjectivals in particular, both more or less glossable as 'noisy', i.e. *soozooshii* and *sawagashii*. These terms are used to describe sound of extremely loud volume, but when it comes to the description of musical sounds, whether music can be described as *soozooshii* (*sawagashii*) or not depends not only on volume, but very much on the type of music involved. Classical music played at loud volume, for instance, cannot normally be described as *soozooshii*. Rock music, however, can --- even if it is played at relatively low volume. This would seem to suggest then, that *soozooshii* (*sawagashii*) connotes something unfavourable.

*Shizuka*, in its basic domain, may also convey the meaning of 'calm'. This stands to good reason --- only still or calm (i.e. motionless objects emit no sound and are capable of silence; silence and stillness thus going hand in hand:

3. Of course, it cannot be certain that *otonashii* originated in this domain. Synchronically, at least, it would seem that Japanese speakers will cite its use as a personality descriptor as its 'basic' meaning.
As a transfer to the domain of colour, *shizuka* commonly occurs in collocation with the noun *iro* 'colour', i.e. *shizuka na iro* 'quiet colour', and patterns in near synonymity with *otonashii iro* (*otonashii*, we have mentioned, is an extended term from the domain of personality attributes). The difference between these two expressions, it would seem, is their denotational range --- a *shizuka na iro* must refer to the specific colours of green and blue, while even a colour such as red may be referred to as *otonashii*, e.g. *kono aka wa otonashii* 'this red is quiet' (referring to a red which is not 'bright'), cf. *kono aka wa shizuka da*. *Soozooshii /sawagashii* have also extended their meanings to the domain of colour, i.e. *soozooshii/sawagashii iro*, to denote bright colours such as red, and may be regarded as functioning in a relationship of antonymy with *shizuka* in this domain too.

It has been scientifically proven that the colour red is the most stimulating of all colours to the human eye, whereas the least stimulating colour is green (Coren, *et al.* 1979). It is thus highly appropriate that the prototypical colour of a *soozooshii/sawagashii iro* is red (*aka*), and of a *shizuka na iro* is green (*midori* rather than *ao* 'blue/green'). This situation in the colour domain parallels the basic meaning of these terms as they pattern in the sound domain --- i.e. sounds which are of loud volume (*soozooshii/sawagashii*) are the most stimulating to the ear, whereas
sounds of low volume, or no sound at all, are auditorily the least stimulating (shizuka). Similar associations between auditory and visual stimulation are also made in English: loud sounds $\rightarrow$ loud colours, soft/quiet sounds $\rightarrow$ soft/quiet colours.

This biological factor of stimulating and soothing colours to the eye is also reinforced in nature. Actually, given the fact that similar sound-colour transferences are found in both Japanese and English going against the grain of innate synaesthesia, one is well tempted to search for explanations in nature which may enable one to hypothesize that the occurrence of these sound-to-colour transfers may, instead, be based on a universally-learned associative synaesthesia: And indeed, such a theory may be expounded.

Simply stated, vegetation (midori) and the depths of the ocean (ao) evoke images of tranquility (shizuka) --- they are bodies of matter which, under their own force, are incapable of movement --- and hence do not emit sound. On the other hand, red (aka) in nature, e.g. fire, is associated with energy and movement (note the fact that humans also become hot and red-faced with heightened activity) --- and movement of matter implies the emission of sound. Such sounds need not necessarily be stimulating to the ear, but when compared to the colours midori and ao which are designated as shizuka to, aka may only be described as its opposite: soozooshii or sawagashii.

************

4. Note the commonly used expression: shizuka na ao to tataete iru 'brimming with quiet blue'.
触覚

SENSE OF TOUCH
SYNAESTHETIC ADJECTIVALS
OF TOUCH

<table>
<thead>
<tr>
<th>TOUCH</th>
<th>DIMENSION</th>
<th>COLOUR</th>
<th>TASTE</th>
<th>SMELL</th>
<th>SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIBUI</td>
<td>'dull'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>SURUDOI</td>
<td>'sharp'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>YAWARAKAI</td>
<td>'soft'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>KATAI</td>
<td>'hard'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>NAMERAKA</td>
<td>'smooth'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>KITSUI</td>
<td>'tight'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>KAWAITA</td>
<td>'dry'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>TOGETOGESHI</td>
<td>'sharp'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>SHIMETTA</td>
<td>'damp'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>SAMUI</td>
<td>'cold'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>ATSUKURUSHII</td>
<td>'sultry'</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUZUSHIGE</td>
<td>'cool'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>ATATAKAI</td>
<td>'warm'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>TSUMETAI</td>
<td>'cold, cool'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>SUZUSHII</td>
<td>'cool'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>KARUI</td>
<td>'light'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>OMOI</td>
<td>'heavy'</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
EXAMPLES OF INTERSENSORY TRANSFER
FROM THE DOMAIN OF TOUCH

NIBUI

Nibui tezawari ga suru.
It feels blunt to the touch.

(C) Sono buttai wa nibui hikari o hanatte ita.
The object emitted a dull light.

(So) 'Gotsun' to iu nibui oto ga shita.
It made a dull, thumping sound.

SURU DOI

Kono naifu no ha wa surudoi.
This knife is sharp.

(So) Surudoi sakebigoe ga kikoete kita.
A piercing scream reached my ears.

YAWARAKAI

Kono booru wa yawarakai.
This ball is soft.

(C) Soto wa haru no yawarakai yookoo ni tsutsumarete iru.
The open air was shrouded in the gentle sunlight of spring.

(So) Kare wa yawarakai koe de hanasu.
He speaks in a soft voice.

KATA I

Daiyamondo wa tetsu yori katai.
Diamond is harder than iron.

(So) Kanojo wa katai koe de hanashi tsuzuketa.
She kept talking in a stiff voice.
Zotto suru hodo samuzamutoshiita iro.
A cold colour which makes one shudder
Samuzamutoshita fuukei.
A bare landscape

Suzushige na natsu no yuuke.
Cool summer evenings

Atatakai hi ga tsuzute iru.
Warm days are continuing.

Aka wa atatakai iro de aru.
Red is a warm colour.

Kare no koe niwa atatakami ga aru.
He has warmth in his voice.

Suidoo no mizu ga dandan tsumetaku nattekita.
The tap-water is getting colder
[and colder]

Ao wa tsumetai kanji no iro da.
Blue is a cold colour.

Kare wa tsumetai koe de kyozetsu shita.
He refused in a cold voice.

Asa ban dandan to suzushiku nattekita.
The morning and evenings are getting cooler.

Natsu no yoofuku wa suzushii iro ga ii.
For summer clothes cool colours are good.
Kono ishi no hyoomen wa nameraka da.
This stone's surface is smooth.

(Kono anaunsaa no koe wa nameraka da.
This announcer's voice is gentle to the ear.

Kono neji wa kitsu shimatte iru.
This screw is tightly fastened.

(Bahaoya wa kitsu koe de kodomo o shikatta.
The mother scolded the child in a stern voice.

Kono hen no tochi wa 'kara-kara' ni kwaite iru.
The soil in this area is dry.

(Sono gakki wa kawai oto ga suru.
That musical instrument has a dry sound.

Furui zaimoku no hyoomen wa togetogeshi.
The surface of the old timber is splinterly.

(Kono yoofuku no iro wa togetogeshisugiru.
The colour of these clothes is too harsh.

Yotsuyu de niwa no shibafu wa shimette iru.
The garden grass is wet with the night's dew.

Shingi ongaku ga kikoete kuru.
Tearful music comes to my ear.

Kyoo wa samui tenki da.
It is cold today.
**KARUI**

*Kono nimotsu wa karui.*
This baggage is light.

---→ (H)  *Karui tenpo no ongaku*
music at light tempo

**OMOI**

*Kare wa ano omoi ishi o mochiageta.*
He lifted up that heavy stone.

---→ (C)  *Kono heya no kabe niwa omooshiti iro ga au.*
This wall suits a heavy colour.

---→ (H)  *Kare wa omooshiti koe de so itta.*
He said so in a heavy voice.
The actual movement of transfer from the domain of touch in Japanese generally follows that of Williams' model: Exceptions are few, and not without controversy. However, when compared with Williams' survey of English where the domain of taste is the recipient of the greatest number of touch-transferred terms, it is notable, and perhaps even strange, that in Japanese no extended meanings of tactile terms pattern in the domain of taste. An explanation as to why this should be so is in order.

It is widely acknowledged (see, for example, Backhouse, 1978) that taste experience is a complex process involving not only gustation, but the sensory systems of touch and smell as well. It is reasonable to expect, therefore, that everyday taste description should cover a "wider range of qualities than those perceived through the taste cells alone" (Backhouse, 1978:5). At least this is the case for the taste vocabulary of English and Japanese. For instance, in Japanese, karai 'hot, pungent' and shibui 'astringent' are two such terms denoting qualities other than gustatory (i.e. qualities perceived via the taste cells); both terms denoting types of tactile sensations perceived within the mouth/nose area.

Actually, karai and shibui are examples of taste-terms which are basic to the lexical field of taste in Japanese; that is, these terms have not transferred to the taste domain from any other sensory domain. This situation, however, need not always be the case. The term pungent in English, for example, was originally a term basic to the domain of touch before having
synaesthetically transferred to the domains of smell and taste (in that order)\textsuperscript{1}. Indeed, as Backhouse (1978) notes "... it is a well-known fact that many qualities which are subsumed under taste in everyday usage are in fact olfactory" (p.6).

While we agree with Lehrer's (1978:118) premise that

\[\ldots\textit{taste is a complex process and involves sensory receptors in the mouth and nose that respond to touch, taste, and smell. And therefore one would expect considerable overlap of meanings.} [my emphasis]\]

it seems obvious, especially from a comparative point of view, that given the complexity of the taste experience, some criterion is necessary to delimit the field of taste in a principled manner; and to this end we have adopted the approach used by Backhouse (1978) in his attempt to delimit the lexical field of taste in Japanese:

If we assume that Japanese has a question of similar status to \textit{What does it taste like?} in English, then lexical items elicited in responses to that question can justifiably be viewed as constituting the lexical field of "taste" by virtue of their common occurrence. (p.51)

Thus, by Backhouse's definition, we consider a 'true' (folk classification) taste-term to be one that may be provided in response to the question-frame:

\textsuperscript{1} Quoted from the Oxford English Dictionary in Williams (1976), p.476
X wa donna aji ga suru? Un, (aji wa) chotto —
desu ne "What does X taste like? Well, it tastes a little——. 2

It is interesting to note that of the twenty-seven (27) English touch-terms listed by Williams (appendix I, 475-6), twenty-one (21) of these terms have synaesthetically transferred to the taste domain at some stage of their linguistic life; and furthermore, that all of the terms in current use3 would seem to be more or less acceptable responses to the question-frame: What does it taste like? It tastes —— (smooth, cold, hard, etc.). However, when the equivalent question-frame is applied to Japanese, i.e. X wa donna aji ga suru ? Un, (aji wa) chotto —— desu ne, we find that, unlike English, there are no transferred terms from the domain of touch which may suitably be inserted into the response-frame.

This does not mean, of course, that in Japanese, sentences such as Kono niku wa chotto katai desu ne 'This meat is a little hard' cannot be used to describe various sensations involved with the taste experience. Instead, what we are claiming is that these terms do not form part of the everyday taste vocabulary of Japanese,

2. Backhouse's approach, however, differs slightly from ours in that the X in the question frame X wa donna aji ga suru is restricted to generic nouns, i.e. 'What do Xs (in general) taste like?'
3. Lehrer (1978:118.f.11) states that she "would challenge the judgement [of Williams] of obsolence for pungent". To this statement, I think we can safely say the same for soft, another term which Williams also judges as obsolete, e.g. This Danish ice-cream tastes soft and creamy.
but rather, that these terms simply denote tactile sensations perceived within the mouth, and as such (by our definition), cannot be regarded as transferred tactile-taste terms in that language, but must be considered original touch-terms per se.

What must be kept in mind is that the purpose of our 'delimiting' criterion has not been to exclude all 'potentially transferable' touch-terms from the taste domain, as the same criterion has been applied to Williams' list of transferred tactile-taste terms (with positive results). It would just appear that tactile-terms are excluded by the Japanese language in its everyday description of taste. Perhaps this should not be surprising, for as Backhouse (1978:8) notes:

A linguistic study of taste terms in everyday usage must be prepared to find that their denotational range takes in dimensions other than gustation alone ... Of course, the precise denotational range of the lexical field is likely to vary across languages. [my emphasis]

Thus, it can be seen that this area of transference (i.e. from the touch domain to the taste domain) is one area where the Japanese language departs radically from Williams' model for English. To be sure, the issue is highly controversial, and it is one on which we do not wish to dwell. One significant consequence of this however, is that it naturally implies a distinctively new model of transference for the Japanese language:
There is also one 'possible' irregular transference from the domain of touch: *surudoi nioi* 'lit.) sharp smell'. According to Kunihiro (1983:124), the collocation *surudoi nioi* "seems to exist" in Japanese, but since this appears to be an example comparable to *loud taste* in English, which also sounds as if it could be said, but which in fact is usually not, *surudoi* as a transference to the domain of taste has been rejected on the grounds that it is not in common usage.\(^4\)

**TOUCH TO COLOUR**

There are nine touch-terms which have regularly transferred to the colour domain: *nibui* 'dull', *yawarakai* 'soft', *togetogeshii* 'sharp', *samui* 'cold', *suzushii/suzushige* 'cool', *atakai* 'warm', *tsumetai* 'cool/cold', and *omoi* 'heavy'. No claim can be made with certainty, however, as to whether some of these terms have directly transferred from the touch domain or whether they are 'second-order' transfers from the sound domain.

\(^4\) In fact, all the Japanese speakers I have questioned about the acceptability of the collocation *surudoi nioi* have flatly rejected it.
Nibui

In the basic domain of touch, *nibui* 'dull, blunt' has rather limited collocational possibilities, patterning almost exclusively (if not exclusively) with the nouns *kireaji* 'cutting quality' and *ha* 'blade', e.g. *kono hoochoo no kireaji ga nibui* 'the cutting-quality of this kitchen-knife is dull (blunt)'; *kono naifu wa ha ga nibui* 'this knife's blade is dull (blunt)'. In other words, in the tactile domain *nibui* is used to refer to the blade of knives and other similar cutting-instruments which do not cut well. Its antonym in the field, *surudoi* 'sharp', however, has a somewhat wider collocational range in that, apart from blades, it may also refer to sharply-pointed objects such as spears, pencils, etc. which do not possess a cutting-edge, e.g. *kono naifu wa ha ga surudoi* 'this knife's blade is sharp'; *kono empitsu wa surudoi* 'this pencil is sharp'; cf. *kono empitsu wa nibui* 'this pencil is blunt'.

As a transfer to the domain of colour, *nibui* 'dull, blunt' abandons its semantic opposition with *surudoi* 'sharp' (which does not transfer to the colour domain), and patterns in collocation with the noun *hikari* 'light', i.e. *nibui hikari* '(lit.) dull (blunt) light'. Unlike its counterpart 'dull' in English however, which has also transferred to the colour domain from the tactile domain, *nibui* does not pattern with nouns denoting specific colours, e.g. *nibui aka* 'dull red', *nibui ao* 'dull blue'; and even the collocation *nibui iro* 'dull colour' itself would appear to border on unacceptability.

---

5. See *amai* as a metaphorical touch-term, Ch.5, for further discussion on *nibui* and *surudoi*. 
So what, then, is a *nibui hikari* 'nibui light', and what does it mean for something to *nibuku hikaru* 'shine nibuku'? As strange as it may seem at first, a discussion in terms of the distinctive features of *gravity* and *diffuseness* (Jakobson, Fant, & Halle, 1963) provides 'adequate' terminology for a description of *nibui* as a colour-term, not to mention an interesting analogy.

Moreover, since *nibui* (and *surudoi*) has also extended its meaning to the domain of sound, e.g. *nibui oto* 'nibui sound', such an approach would seem rather appropriate. In fact, given the uncertainty of Japanese dictionaries in listing their entries in chronological order, it is not possible to determine whether the colour domain or the domain of sound was the first domain to which *nibui* transferred; it is not only possible that *nibui* has transferred directly to both these domains separately, but it is also possible that one of these domains represents a second-order transfer from the other. While there is no hard 'evidence' as such, the fact that: (i) *surudoi* patterns in the sound domain as the antonym of *nibui*, i.e. that the antonymous relationship between these two terms in the basic domain has been retained, but does not pattern in the colour domain; (ii) *nibui* as a colour-term appears to be restricted in collocation to the term *hikari* 'light'; (iii) transfers to the sound domain outnumber transfers to the colour domain by one-and-a-half times (this figure includes terms which have transferred to both domains), would seem to suggest

---

6. Lehrer's (1974:35-41) discussion of the semantic field of sound in English reminds us of the difficulty involved to adequately describe specific sound qualities in words.
that \textit{nibui} (and \textit{surudoi}) transferred to the domain of sound first, and from there, transferred (without \textit{surudoi}) to the domain of colour. Perhaps this explains why a discussion based on the acoustic features \textit{gravity} and \textit{diffuseness} should work so well. Before dealing with \textit{nibui} as a colour-term however, it would seem wiser to begin our discussion with \textit{nibui}, and \textit{surudoi}, as they pattern in the acoustic domain.

A \textit{surudoi oto} '\textit{surudoi} sound' may be described as one which, on a dimension of diffuseness, concentrates most of its energy in a small region of the spectrum (i.e. compact), whereas a \textit{nibui oto} '\textit{nibui} sound' spreads its energy over larger spectral regions (i.e. diffuse). Secondly, on a dimension of gravity, 'compact' sound is accompanied by high-pitch (i.e. acute), while a lower pitch (i.e. grave) accompanies 'diffuse' sound. In other words, acoustically, a \textit{surudoi oto} is one which is perceived as distinct and clear, while a \textit{nibui oto} is one which is less distinct and somewhat muffled.

Although the discussion of \textit{surudoi} and \textit{nibui} as sound-terms has been couched in rather technical phonetic terminology, it must be kept in mind that this terminology was employed because it conveniently provided an 'adequate' description. In fact, such a description would be similar in many respects to how a non-linguist would describe his/her perception of a \textit{surudoi oto}, i.e. "a sound which seems to somehow take up only a small amount of space and is high-pitched". Indeed, from the point of view of human sound production, such an explanation correlates with the actual position in the mouth where these sounds
are produced; high-pitched sounds being produced in the high, front regions of the mouth, over a small area, while low-pitched sounds are produced in the lower and back regions of the mouth, covering a wider area.

According to one native Japanese speaker, a *nibui oto* could well describe those consonants in Japanese which are marked with 'dakuten' (i.e. in written Japanese, a 'dakuten' is a mark placed next to a syllabic character to indicate that it should be pronounced as voiced, e.g. "bu, ga", while a *surudoi oto* could well describe voiceless consonants, such as "ki". (It is interesting to note the choice of vowels employed by the speaker).

Such descriptions in terms of 'diffuseness' and 'gravity' would also seem to supply the key to the conceptual link between *surudoi* and *nibui* as basic touch-terms, and these terms as they pattern in the domain of sound: A *surudoi ha* 'sharp blade' is one whose cutting edge is 'compact' and spread over a very small area (hence its sharpness) and is perceived as 'distinct' to the sense of touch, whereas a *nibui ha* 'dull (blunt) blade', on the other hand, is spread over a wider area (hence its bluntness) and is perceived as rather 'indistinct' to the sense of touch. It is interesting to note here Lehrer's (1978:100) comments on *sharp* in English, that "sharp ... is ... spacial ('having a thin edge or fine point')". Indeed, that two unrelated languages share the same transferences is surely not coincidental.

The meaning of *nibui* as a transfer to the colour domain would now seem obvious, since the semantic bridge which spans the basic meaning of *nibui* to the sound
domain is the same link that presents itself in the colour domain. A *nibui hikari* 'nibui light', then, is a light which gives one the impression that it is 'spread out' (i.e. diffuse) over a wider area than it need be (i.e. that it is not 'concentrated' (i.e. compact) into a smaller area than it could be), and such light is perceived by the naked eye as being indistinct and dim --- as if one's eyes are 'out of focus', so to speak.

All is not so straightforward, however: We have seen that the basic meaning of *surudoi* is 'sharp', and that of *nibui* is 'dull (blunt)' (of blades); and that as a colour-term, *nibui* means 'indistinct and dim light'. Thus, it is somewhat surprising to learn that in the case of Japanese swords, those which *nibuku hikaru* 'shine nibuku' are those with extremely sharp blades!

There can be no doubt that what we are dealing with here involves Japanese aesthetics, especially since this rather 'perverse' meaning of *nibui* is only used (or at least so it would seem) in reference to Japanese swords --- perhaps the only highly salient artefact of Japanese culture which possesses a blade.

The idea behind a sword whose blade shines 'indistinctly and dimly' is related to the concept of *shibui*, a term designating subtle, unobtrusive, and deeply moving beauty. Such a sword does not have a 'flashy appeal' unlike the Western idea of a sharp sword-blade. Still, it is a highly lethal weapon; its cutting potential simply remaining 'restrained' and 'unassuming'.

7. See *shibui* as a metaphorical colour-term, Ch.5, for further discussion of this term.
In its basic domain, *samui* 'cold' belongs to the semantic system of atmospheric temperature adjectives comprising the set: *samui* 'cold' — *suzushii* 'cool' — *atatakai* 'warm' — *atsui* (_ATTRIBUTE) 'hot' (Kunihiro, 1967:22), and denotes a sensation of coldness which affects the whole body rather than only a delimited part thereof, e.g. *kyoo wa samui* 'It is cold today'; cf.* samui te* 'cold hands' (Miura, 1983:167).

As an extended term, however, it would seem that *samui* is an example of an adjective which tends not to retain its original shape (see Martin, 1985:799), occurring in most of its extended domains in the reduplicated form *samuzamu* (to *shita*) or (for some speakers apparently) *samuzamui*:

(1) *Kyoo no tenki wa samui/* *samuzamui*
    - Today GEN weather TOP samui
      'It is cold today'.

(2) *Ano fuukai wa samuzamui/* *samui* (extended domain)
    That landscape TOP samuzamui
    'The landscape is bare'.

In many (if not all) instances, extended usage of SAMUI (i.e. *samuzamu*) as it patterns in the visual domain (in general) may appropriately be glossed as 'bare'— *samuzamu to shita fuukai* 'bare landscape', *samuzamu to shita keshiki* 'bare scenery', *samuzamu to shita heya* 'bare room', *samuzamu to shita fuyu no kookei* 'bare winter's scene' — and it is interesting to note that we observe this same line of transference between temperature and bareness of scenery, etc. with the term *bleak* in English (n.b. no claim is being made
here as to the actual direction of transfer). Indeed, it is fascinating to speculate just what connection both Japanese and English see between a concept denoting 'cold and raw' (of temperature) and 'exposed and barren' (of landscape, etc.). An insight into this question (for Japanese at least) may be provided by the following dictionary definition of samuzamu: "ikanimo samuku kanjiru yoosu" (Shinmeikai Kokugo Jiten), more or less translatable as 'an appearance which makes one feel cold'.

As a transfer to the domain of colour (a 'subset' of the wider domain of sight), SAMUI (i.e. samuzamu) patterns in collocation with the abstract noun iro 'colour', i.e. samuzamu to shita iro 'a cold colour'. (In light of the above discussion however, a more precise rendition of samuzamu to shita iro would be something to the effect: 'a colour whose appearance makes one feel cold'). Moreover, since samui in its basic domain suggests something unfavourable (for example, the sentence sugasugashii samusa datta 'it was a refreshing coldness' is semantically anomalous), one would also expect samuzamu to connote unpleasantness, and indeed, this would seem to be the case, e.g. suteki na samuzamu to shita iro 'nice, cold colour'.

8. One certainly cannot argue with the fact that a bare room, for example, has physically less warmth present than a fully-furnished room would have; and hence, 'looks' cold.
An important point to note about *samuzamu* as it patterns in the colour domain is that it does not refer to specific colours, but for the Japanese speaker it is associated with the colour *ao*\(^9\); that is, "*hontoo no ao*" ('real blue') --- that part of *ao* which does not include *midori* 'green' or *mizu-iro* 'light blue' for instance.

That *midori* and *mizu-iro* are not regarded as *samuzamu to shita iro* 'cold colours' would seem to support scientific discussion on temperature and colour associations suggesting that such connections are "based on rather loose cultural norms, which are learned only gradually during later childhood and adolescence and are far from universal ..." (Morgan, Goodson, & Jones, 1975:127)\(^{10}\). Indeed, at least for some speakers of English, the colour *green* is considered a 'cold' colour. In fact, Sully (1879), who described a scheme of colour associations over a century ago, went so far as to claim that

... green and blue are generally treated as pretty equal in coldness, if indeed green is not the colder of the two, as many artists suppose. (p.184)

---

9. *Ao*’s range covers not only those shades which are called 'blue in English, but also some which in English are called 'green'.

10. Morgan, Goodson, & Jones' experiments showed that children are not as reliable as adults in the way they assign warmth and coolness to colours.
Yet, for the Japanese speaker, it would seem that *midori* 'green' regardless of however 'dark' in shade it might be (i.e. *koi midori/fukamidori*) is never considered a *samuzamu to shita iro*. On the other hand, however, one doubts that, similarly to Japanese, there would be many native speakers of English who would want to claim that *light blue* is 'cold'; rather, *light blue* tends to be considered a 'cool' colour --- as is the colour *green* for many speakers.

If temperature-colour associations in language are culturally determined, as Morgan, *et al.* claim, rather than biologically determined (i.e. they do not have their basis in sensory synaesthesia), the obvious question to be asked now is why it is in so many languages, including Japanese and English, that yellow and reds are generally considered 'warm' colours, while greens and blues are generally considered 'cool'? 11

Marks (1978:219) suggests that "Blue-green is, after all, the usual colour of lakes and oceans, red and yellow the colours of fires and heated objects". Wierzbicka (in press) perhaps, would not entirely agree with this

11. As we shall see in subsequent discussion, whether 'blue' is considered 'cool' in Japanese depends very much on its shade.
explanation:

... 'cool' (when applied to colours) means, essentially, 'non-warm'; and since 'warm' makes sense only as an indirect reference to fire and/or sun, 'cool' must mean a colour which --- while vivid and highly visible ('coloured') --- does not bring to mind fire or sun.12

Clearly though, both Marks and Wierzbicka's comments offer similar interpretations pointing to salient natural phenomena to explain temperature/colour associations in language.

From a comparative point of view (i.e. with Japanese), it is interesting to note that Wierzbicka's discussion of thermal-hue correspondences revolves around a bipartite classification system --- 'warm' verses 'cool' colours --- and, at least in English, this is the usual system employed; 'warm' colours being reds and yellows, 'cool' colours being blues and greens.

Table 4.1

BIPARTITE CLASSIFICATION SYSTEM OF TEMPERATURE - COLOUR ASSOCIATIONS IN ENGLISH

<table>
<thead>
<tr>
<th>'cool'</th>
<th>'warm'</th>
</tr>
</thead>
<tbody>
<tr>
<td>blue</td>
<td>red</td>
</tr>
<tr>
<td>green</td>
<td>yellow</td>
</tr>
</tbody>
</table>

12. Wierzbicka's position on this matter has since changed. She now believes that an association with ('cool') water (for blue and green) must also play a part (personal communication).
It should not be overlooked, though, that the English language, at times, makes finer distinctions of temperature/colour associations by employing a quadrapartite system: hot/red, warm/yellow, cool/green, and cold/blue.

Table 4.2

<table>
<thead>
<tr>
<th>'cold'</th>
<th>'cool'</th>
<th>'warm'</th>
<th>'hot'</th>
</tr>
</thead>
<tbody>
<tr>
<td>blue</td>
<td>green</td>
<td>yellow</td>
<td>red</td>
</tr>
</tbody>
</table>

Leaving aside hot/red and warm/yellow for later discussion, it can now be seen that it becomes decidedly more difficult to hypothesize on the basis of natural phenomena, why the 'cool' colours of blue and green in the binary system of English breaks down into the associations cold-blue and cool-green when the quadrapartite system is employed. In fact, one suspects that this system of finer distinctions is not made on any associative basis with natural phenomena per se, but rather, on the established binary-system; that is, focal green is perceived as a hue which is more similar in shade to yellow (associated with 'warmth' in the binary system) than is focal blue, and thus retains its 'cool-ness', while focal blue is relegated from being a 'cool' colour to a 'cold' colour.

Such a hypothesis, however, fails to take into account that for most, if not all speakers of English, light blue is considered to be a 'cool' colour, rather than a 'cold' colour, in spite of the fact that focal
blue is a 'cold' colour in the quadrapartite system. One can only conjecture here that light blue is perceived as a 'weak' blue and since focal blue is associated with coldness in the quadrapartite system, light blue has come to be associated with weak atmospheric coldness — that is, 'coolness'.

When compared to English, the Japanese classification systems of temperature — colour associations are not so straightforward; one reason for this being that these systems are complicated by the fact that temperature terms in Japanese constitute a two-dimensional semantic system divided between atmospheric and tactile temperature, as opposed to the one-dimensional system of English (Kunihiro, 1970:328).

As we have already mentioned, samui 'cold' belongs to the atmospheric temperature semantic-system; and of this set, three out of the four basic terms have transferred to the domain of colour: samui —> samuzamu to shita iro 'cold colour', suzushii —> suzushii (or suzushige na) iro 'cool colour', and atatakai —> atatakai iro 'warm colour'. This situation, in many respects, is reminiscent of the quadrapartite classification system of temperature/colour associations in English, where blue and green separate as 'cool' colours in the bipartite system to become 'cold' and 'cool' colours respectively: Japanese focal ao 'blue' (i.e. "hontoo no ao" — 'real blue')— not to mention blues such as kon 'indigo-blue', a salient colour in Japanese culture (Stanley, 1987:112) — is considered a samuzamu to shita iro, while suzushii (suzushige na) iro is associated with the colour mizu-iro 'light blue' in particular, and includes midori 'green' and other shades
of greens, such as \textit{ki-midori} 'yellow-green'. What prevents a true quadrapartite system from forming in Japanese is that, unlike English, *atsui iro* 'hot colour' (or a similar expression) does not exist.

Table 4.3

<table>
<thead>
<tr>
<th>TRIPARTITE CLASSIFICATION SYSTEM OF TEMPERATURE - COLOUR ASSOCIATIONS IN JAPANESE</th>
</tr>
</thead>
<tbody>
<tr>
<td>'samuzamu'</td>
</tr>
<tr>
<td>\textit{ao} 'blue'</td>
</tr>
<tr>
<td>(\textit{kon} 'indigo')</td>
</tr>
</tbody>
</table>

Why this asymmetrical system? One may well ask. Why does not Japanese have a simple bipartite system consisting of \textit{suzushii} 'cool' and \textit{atatakai} 'warm' colours, with focal \textit{ao} 'blue' considered a \textit{suzushii} \textit{iro}? One assumes that it may have something to do with the semantics of \textit{atatakai} 'warm' and \textit{suzushii} 'cool' or at least this is the hypothesis we hope to pursue.

As atmospheric temperature terms, the first thing to note about \textit{atatakai} 'warm' and \textit{suzushii} 'cool' is that unlike the other two terms of the basic system, i.e. \textit{samui} 'cold', \textit{atatakai} and \textit{suzushii} always carry a connotation of pleasantness. According to Miura (1983), \textit{atatakai} is most appropriately used "when we have a nice warm day in the midst of winter, or when winter gradually gives way to pleasant spring weather" (p.31); and \textit{suzushii}"when there is a pleasant drop in temperature following a hot day or a hot season". Miura further adds that \textit{suzushii} differs from its counterpart 'cool' in English in this respect, in that \textit{cool} simply represents
a temperature range between cold and warm, regardless of previous temperatures (p. 189).

There can be no doubt that the term atatakai '[pleasantly] warm' invokes an image of the sun for the Japanese speaker (or perhaps, an image of fire) --- as does its equivalence in many languages of the world, including English. And since the sun (and fire) is culturally perceived by the Japanese as being of the colour aka 'red', one would expect then, that as a transfer to the colour domain, the 'focal exemplar' of an atatakai iro '[pleasantly] warm colour' would be aka 'red' --- and indeed, this seems to be the case.

Now, to describe that other highly visible and vivid colour ao 'blue/green', which does not bring to mind associations with the sun (or fire) --- in fact one could say that the focal 'blue' part of ao via its associations with the colour of lakes, oceans and the like, invokes quite the opposite --- Japanese employs samuzamu '[unpleasantly] non-warm' (i.e. cold) to express the 'opposite' of atatakai iro '[pleasantly] warm colour'. Indeed, this dichotomy between atatakai iro and samuzamu to shita iro (i.e. aka 'red' verses focal ao 'blue') would seem rather a natural one. However, what we have yet to explain is why suzushii (suzushige na) iro '[pleasantly] cool colour' should also exist within the same temperature-colour system. To this point we now turn.

As Wierzbicka (in press) notes, the colour ao in Japanese

..... is used to cover many 'greens' (as well as all 'blues') ..... the 'best example' ..... is clearly in its 'blue' part ..... unquestionably provided by the sky ...

13. ... since of the two basic atmospheric terms denoting 'non-warmth', suzushii 'cool' carries connotations of pleasantness.
To be sure, the colour \textit{ao} is bifocal (in present-day Japanese, this tends to represent little more than a vestige of an earlier stage of the evolutionary sequence of colour naming (Ando, 1986) --- the 'green' part of \textit{ao} progressively being taken over by the term \textit{midori}), but as we have already mentioned, all 'blues' covered by the term \textit{ao} do not bring to mind 'unpleasantly non-warm' (i.e. cold) associations; such associations being only invoked by "\textit{hontoo no ao}" (real blue), i.e. focal 'blue'.

Indeed, as Wierzbicka also points out, the best example of \textit{ao} is provided by the sky; that is to say, Japanese speakers will invariably cite \textit{sora} 'sky' as the first thing that comes to mind when asked: What does the colour \textit{ao} remind you of? However, no Japanese speaker would associate the colour of the sky with unpleasantly cold thermal conditions. This is accountable by the fact that although \textit{ao} makes Japanese speakers think of the sky, the actual colour of the sky is perceived as being lighter than focal \textit{ao} 'blue' --- in fact, it is \textit{sora-iro} 'sky blue' (literally 'sky colour'). "\textit{Hontoo no ao}" is undoubtedly best provided in nature by the colour of the sea (seemingly the second most frequently cited example that comes to mind when asked what one is reminded of by the colour \textit{ao}), and which does bring to mind unpleasantly cold associations. Thus, it is curious to note here that the colour \textit{mizu-iro} 'light blue', which literally means 'water colour', is not regarded as a \textit{samuzamu to shita iro} either.

In fact, it is those colours, such as \textit{sora-iro} 'sky blue' and \textit{mizu-iro} 'light blue', which are
excluded from the range of *hontoo no ao* (the focal 'blue' part of *ao*) by virtue of the fact that they are considerably 'lighter' (or 'weaker') in shade, which are designated in Japanese as *suzushige na/suzushii iro* '[pleasantly] cool colours'. Needless to say, this has its parallel in the ambient temperature: 'cool' climatic conditions (*mizu-iro*) being less harsh (desaturated in colour) than 'cold' climatic conditions (focal *ao* 'blue').

What we are claiming, then, is that *suzushii* as a colour term is defined by its relationship to *samuzamu* (rather than *atatakai*). Thus, on the one hand, we note that in the Japanese tripartite classification system of atmospheric touch-colour associations there is a dichotomy between *atatakai iro* '[pleasantly] warm colours' and *samuzamu to shita iro* '[unpleasantly] non-warm (i.e. cold) colours' (*aka* versus *ao*), and on the other hand, a dichotomy between *samuzamu to shita iro* '[unpleasantly] non-warm (i.e. cold) colours' and *suzushige na/suzushii iro* '[pleasantly] non-warm (i.e. cool) colours' (*ao* versus *mizu-iro*).

It must also be mentioned that under the rubric "*suzushii*" is also that 'green' part of *ao*, and, subsequently, *'midori'* --- if only due to the fact that 'green' is not regarded as a *samuzamu to shita iro*. Indeed, Japanese speakers, it would seem, are less happy with designating the 'green' part of *ao* as a *suzushii iro* than they are with that 'blue' part of *ao* which falls outside of *hontoo no ao*. This situation is certainly in stark contrast to English, where most speakers would happily designate *green* as a 'cool' colour, at least. Darker shades of the 'blue' part of *ao* however, such as *kon* 'indigo-blue', are not regarded as *suzushige na/suzushii iro* (but are regarded as *samuzamu to shita iro*), and one contends that this is...
because darker-than-focal shades are still subsumed within the range of focal *ao*.\textsuperscript{14}

The last of the 'non'warm' temperature terms to be mentioned is *tsumetai*. Unlike *samuzamu* and *suzushii* however, *tsumetai* belongs to the semantic system of tactile temperature adjectivals, denoting a thermal sensation which is "perceived by the skin only or by a limited portion of one's body" (Miura, 1983:205), and consequently, participates in the colour domain in a separate, second classification system of temperature-colour associations.

The denotational range of *tsumetai* in the tactile domain covers both the meanings of the atmospheric temperature terms *samuzamu* and *suzushii*, i.e. 'cold' and 'cool'; and *tsumetai* comprises one of the basic terms of the tactile temperature semantic system: *tsumetai* 'cold/cool' — *nurui* 'lukewarm' — *atatakai* 'warm' — *atsui* (熱) 'hot' (Kunihiro, 1967:22). Of this set, however, it can only be said with certainty that *tsumetai* 'cold/cool' has transferred to the colour domain: *tsumetai* iro 'tsumetai colour'; the status of *atatakai* as a transfer from the tactile temperature system being somewhat questionable (see *atatakai*, next section).

The most important point to note about the collocation *tsumetai* iro is that it is referentially synonymous with *samuzamu* to *shita* iro, both terms restricting their referents to the (real) 'blue' part of *ao*; and this would seem to indicate that as a transferred term to the colour domain, it is only *tsumetai*'s basic meaning of 'coldness' which has been maintained, and not 'coolness' (because a *tsumetai* iro is not the

\textsuperscript{14} See Stanley (1987) however, who argues that *kon* is not included in the range of *ao*, and is a candidate for being a basic colour-term.
'same' as a *suzushii iro*. Connotatively, however, *tsumetai iro* and *samuzamu to shita iro* differ: *samuzamu* retains its basic connotations of 'unpleasantness', while *tsumetai* appears neutral in this respect.

**Atatakai**

Discussion on *atatakai* '[pleasantly] warm' as an atmospheric temperature term has necessarily been included in the previous section on 'cool-colour' associations; but what we have yet to discuss is the fact that *atatakai* is also a term which belongs to the tactile temperature semantic system, consisting of the series: *tsumetai* 'cold/cool' — *nurui* 'lukewarm' — *atatakai* 'warm' — *atsui* (炎) 'hot' (Kunihiro, 1967:22).

Whether *atatakai* represents one word with two senses, or two separate words, however, is a matter which is far from clear. Kunihiro (1967) and Miura (1983), for example, treat *atatakai* as a single word, yet regard *atsui* 'hot', a term also belonging to both temperature systems, as two separate words. This, perhaps, should not be surprising, since *atsui* and *atsui* are distinguished in the writing system by different characters, i.e. 熱い and 薄い. 15

*Atatakai*, on the other hand, tends to be written with a single *kanji*, i.e. 暖かい (note the 'sun' radical), but it too has a second *kanji*, i.e. 湯がい (note the 'water' radical) which may be used in reference to warm

---

15. I.e. The borrowing of *kanji* characters from Chinese has forced the Japanese language to make a distinction of meaning which originally was never there.
liquids (i.e. a 'narrow' example of tactile temperature experience), although many Japanese, it would seem, do not necessarily make this distinction. An atatakai iro is thus normally written with the character 暖, though denoting the atmospheric tactile temperature experience, and it is this character (rather than the character with the 'water' radical) which is employed in written Chinese to denote 'warm colour' in that language too (Luo Yongxian, personal communication).

On occasion however, the character 暖 is used in Japanese to convey the meaning of 'warm' colour (see, for example, Kenkyuuusha's New Japanese-English Dictionary), and one may well hazard a guess as to why this may be so: Since tsumetai, belonging to the same (tactile temperature) system, has transferred to the colour domain, some dictionary makers have preferred to choose the corresponding 'tactile temperature' kanji character for atatakai, rather than the 'atmospheric temperature' kanji character.

Of course, in speech, there is only 'one' atatakai (as is the case for the written word for many speakers), so there can be no doubt that atatakai (iro) always carries a connotation of pleasantness, even when cited as the 'opposite' of tsumetai (iro), which carries no connotations of pleasantness/unpleasantness. We may thus conclude that a bipartite classification system of tactile temperature-colour associations in Japanese is harder to justify than the tripartite system of atmospheric temperature-colour associations.

***************
味覚

SENSE OF TASTE
SYNAESTHETIC ADJECTIVALs
OF TASTE

<table>
<thead>
<tr>
<th>TASTE</th>
<th>TOUCH</th>
<th>DIMENSION</th>
<th>COLOUR</th>
<th>SMELL</th>
<th>SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMAI 'sweet'</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMATTARUI 'too sweet'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHIOKARAI 'salty'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>AMAZUPPAI 'sweet-sour'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>SHIBUI 'astringent'</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KUDOI 'heavy'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>SHITSUKOI 'cloying'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>UMAI 'delicious'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
EXAMPLES OF INTERSENSORY TRANSFERS
FROM THE DOMAIN OF TASTE

AMAI

Kono keeki wa amai.
This cake is sweet.

→ (To) Kono naifu no ha wa amai.
This knife is blunt.

→ (Sm) Hana no amai kaori
The sweet smell of flowers

→ (So) Amai kotoba niwa ki o tsuketa hoo ga ii.
You had better be on your guard against honeyed words.

Amai merodii
A romantic melody

AMATTARUI

Kono zenzai wa amattarui.
This bean-meal soup is too sweet.

→ (Sm) Kono koosui wa amattarui nioi ga suru.
This perfume smells too sweet.

→ (So) Kanojo wa amattarui koe de kare ni nedatta.
She coaxed him in an oily tone of voice.

SHIOKARAI

Kono shake wa shiokarasugiru.
This salmon is too salty.

→ (So) Kare wa shiokaragoe de makushitateru.
He rattles away in a hoarse voice.

AMAZUPPAI

Natsu wa toki ni amazuppai mono ga tabetaku naru.
In summer, I especially want to eat sweet-sour things.

→ (Sm) Amazuppai kaori ga tadayotte kita.
A sweet-sour fragrance drifted my way.
SHIBUI  Watashi wa shibui ocha ga kirai desu. desu. 
I don't like astringent green-tea.

→ (C)  Kono kimono no iro wa nante shibui no daroo. 
How tasteful is the colour of this kimono!

→ (So)  Kare no koe wa shibui. 
His voice is trained.

KUROI  Kono ryoori no aji wa kudoi. 
This food tastes heavy.

→ (Sm)  Kono koosui no nioi wa kudoi. 
The smell of this perfume is heavy.

SHITSUKOI  Kono furansuryoori wa shitsukoi. 
This French food is cloying.

→ (Sm)  Kono iya na nioi wa shitsukokute nakanaka kienai. 
This bad smell is lingering and it just won't go away.

UMAI  Kono mise no raamen wa jitsu ni umai. 
This shop's Chinese noodles are really delicious.

→ (So)  Kare wa uta ga umai. 
He is skilful at singing.
In accordance with Williams' model of intersensory transfer, the overwhelming majority of Japanese taste terms have synaesthetically extended their meanings to the domains of smell and sound.

That there is a preponderance of transfers to the olfactory domain should hardly be surprising; since, as Lehrer (1978:119) points out, "we can simultaneously perceive the taste and smell of food and beverages that we are taking." Indeed, food that tastes sweet (or amai) for example, more often than not also smells sweet (or amai), and since this appears to be the general principle underlying all gustatory transfers to the olfactory domain, in English as in Japanese, we may conclude that these transfers offer little in terms of interesting analysis, and henceforth, nothing further will be said about them.

In comparison, the meaning extension of taste terms to the domain of sound are somewhat more challenging; it is difficult to speculate at times just what it is that certain taste qualities possess which have led speakers to associate these tastes with sound, and two such transferences will be discussed here: amai 'sweet' and shiokaraï 'salty'.

Apart from these regular transferences however, two particularly salient exceptions to Williams' model may be cited -- one, from the domain of taste to touch (i.e. amai 'sweet'), the other, from the domain of taste to colour (i.e. shibui 'astringent'). These exceptions
generate by far the most interesting discussion of all the transfers from the taste domain, and accordingly, both terms will be dealt with in this chapter.

TASTE TO TOUCH

The domain of taste is one area of sensory experience where the process of meaning extension can occur within one and the same domain (i.e. intrasensory extension) as well as across sensory domains, this being most clearly observed with the taste qualities amai 'sweet' and karai 'hot, pungent'. (Unlike amai however, karai does not extend its meaning synaesthetically). In an attempt to show that synaesthetic extensions of amai (of immediate concern, of course, its extension to the tactile domain) starts from its derived meanings, rather than from its basic meaning, we begin our discussion by first examining amai's intra-domain extensions.

Amai¹

In its basic meaning amai 'sweet' belongs to the same lexical system as other taste-terms such as karai 'hot, pungent', shiokarai 'salty', shibui 'astringent', and nigai 'bitter', where it functions in a semantic relationship of incompatibility with these terms, implying the presence of sugar or similar pleasant-tasting qualities such as is characteristically found with honey or many ripe fruits, e.g. satoo wa amai

¹. This section owes a general indebtedness to A.E. Backhouse's Ph.D dissertation, University of Edinburgh, 1978. In particular, the discussion on meaning extension within the taste domain is a general summary of part of this thesis.
'sugar is sweet', *okashi wa amai* 'confectionary is sweet',
*suika wa amai* 'water-melons are sweet'.

Once outside this basic system however, it can be seen that *amai* continues to maintain its semantic opposition of incompatibility with the taste-term *karai* in a number of commonly-used derived noun forms. For instance, when applied to types of sake or wine, *amai* 'sweet', or the preferred compound form *amakuchi* (*amai*-'sweet' + *kuchi*-'mouth'), contrasts with *karai*/*karakuchi* (*kara*-'pungent' + *kuchi*-'mouth') on a dimension of sweetness with *karakuchi* denoting the absence of sweetness, e.g. *amakuchi no sake* 'sweet sake',

*karakuchi no sake* 'dry sake'; *amakuchi no sheri* 'sweet sherry', *karakuchi no kakuteru* 'dry cocktail'; extralingual opposition thus being one of sweetness (*amakuchi*) verses non-sweetness (*karakuchi*), rather than of sweetness verses pungency, as in the basic system. From a comparative perspective, it is of interest to note that where the Japanese language employs a term from the same domain (i.e. taste domain) to denote non-sweetness in alcoholic beverages (i.e. *amai* verses *karai*), the English language employs a term from the domain of touch (i.e. *sweet* verses *dry*).

A similar case of *amai* and *karai* functioning in extralingual opposition is also to be found in the compound nouns *amatoo* (*ama*-'sweet' + *too*-'group') and *karatoo* (*kara*-'pungent' + *too*-'group'); an *amatoo* being a person who has a preference for sweet things, such as chocolate; a *karatoo*, a person who enjoys alcohol. These two 'groups' tend to be regarded as mutually
exclusive for the Japanese, which is reflected in the fact that one normally does not profess to be both an *amato* and a *karatoo* --- a choice as to which group one 'more suitably' belongs is usually made:

(1) *Boku wa dochira to iu to karatoo da*  
I TOP either QUOT say if karatoo COP  
'I must say, I enjoy my drinks'  
(more literally: 'If I must say which of the two, then I'm a *karatoo*')

Again, the distinction is one of sweetness (*amato*) verses non-sweetness (*karatoo*), rather than of sweetness verses pungency.

There are also cases however, where the meaning extension of *amai* within the taste domain has caused this term to abandon its basic sense of 'sweetness'. For instance, *amai* can be seen to pattern as the antonym of *karai* 'hot' (one of its readings in the basic system) on a dimension of hotness (e.g. of curries, etc.), where *amai* would seem to function as a kind of 'polarity item', serving to indicate the 'non-hot' (i.e. 'mild') end of the dimension:

(2) *Kono karee wa ryoohoootomo karai kedo*  
This curry TOP both hot but  
kotchi no hoo ga mada amai.  
this GEN side SUB still *amai*  

'Both these curries are hot, but, of the two, this is still milder'.

(Backhouse, 1978: 166)
Other intra-domain extensions of *amai* are similar. On a dimension of 'saltiness' as a taste quality for example, *amai*, usually occurring in the expression *shio ga amai* 'salt is *amai*', once again indicates the negative pole of the dimension:

(3) *Kono misoshiru wa shio ga amai*

This miso soup TOP salt SUB *amai*

'This miso soup is not salty enough' (i.e. bland)

Outside the basic domain, *amai* has a variety of extended meanings (see Backhouse, 1978:165-170), and as a synaesthetic transfer to the domain of touch, typically (if not exclusively) functions in collocation with the nouns *kireaji* 'cutting-quality' and *ha* 'blade', e.g. *kono katana wa kireaji ga amai* 'This sword is blunt' (literally: 'As for this sword, its cutting-ability is blunt')3; *naifu no ha ga amai* 'The knife is blunt' (Literally: 'This knife's blade is blunt'). In this context, *amai* may be seen to contrast with *surudoi* 'sharp' which, in turn, stands in an antonymous relationship with *nibui* 'blunt'. However, it is in no doubt due to the fact that *surudoi* and *nibui* function in semantic opposition in this domain (i.e. the domain of touch), that *nibui*, rather than *amai*, is the preferred term for most native speakers. Taking account of Williams' comments on the transference of terms against the predicted pattern, i.e. that new meanings do not tend to be maintained (p.464), the future of *amai* as a touch-term would appear

---

2. A literal rendition of *kireaji* into English would be 'cutting-taste'.

3. It must be pointed out that not only are *katana* salient objects in Japanese culture but that *katana* are unlike European swords in many respects (hence the apparent oddity of this sentence for English speakers). *Katana* have a single cutting-edge which extends the entire length of the blade, reflecting Japanese sword-fighting (*chanbara*) technique, which relies, to a large extent, on slashing strokes, whereas European-style techniques relies heavily on thrusting at one's opponent with the point of the sword.
doubtful. Indeed, there already is a tendency in the language suggestive of its fate.

From the viewpoint of English, of interest here is the fact that *amai* cannot be used in collocation with nouns denoting cutting-instruments, but only with nouns referring to an instrument's cutting-edge or its ability to cut: *kono naifu wa amai* 'This knife is blunt'. In this respect, its collocational range is more restricted than its counterpart *nibui*, which can occur in collocation with lexical items denoting the actual cutting-instrument, e.g. *kono naifu wa nibui* 'This knife is blunt'. It must be admitted however, that not all native speakers find this sentence entirely acceptable, preferring *kono naifu wa ha ga nibui* (literally: 'As far as this knife, its blade is blunt') as the 'correct' expression.

A simple explanation which may account for this situation would seem to lie in the ambiguous nature of *surudoi* 'sharp'. As is the case in English, *surudoi* not only refers to the edge of a blade, but can also refer to its tip. Thus, *kono naifu wa surudoi* 'This knife is sharp' theoretically refers to the knife's point, while *kono naifu wa ha ga surudoi* 'This knife is sharp' (literally: 'As for this knife, its blade is sharp') refers to its cutting-edge. Thus, 'partial' acceptability of *nibui* in collocation with *naifu* and similar cutting-instruments, appears to stem from the fact that its antonym *surudoi* is able to occur in such collocations. However, for instruments which possess a point but no cutting-edge, such as pencils, *nibui* or *amai* can never be used: *kono empitsu wa nibui/amai*
'This pencil is blunt', the correct term here being the verbal form *togatte inai* 'not pointed'.

It is interesting to note that Kunihiro (1982; 1989) makes no mention of *amai* as an exception to Williams' model⁴; and given the fact that the transference of *amai* to the touch domain represents a blatantly obvious exception, one can only conclude that Kunihiro's neglect of this term is due to the fact that he simply regards *amai* (the taste-term) and *amai* (the touch-term) as a case of homonymy. Indeed, there is little doubt that most, if not all, present-day native Japanese speakers would think so too.

One feels, however, that there is a link between the two *amais* --- or at least there was; and the key to this link, it will be argued, is that the meaning extension of *amai* has started from its derived meanings (i.e. as it functions as a kind of 'polarity' item in its extended usages within the domain of taste) and not from its basic meaning as a taste quality (i.e. 'sweet'). It should be pointed out that Dirven (1985) notes a similar process of meaning extension for *sweet* in English (to be read in conjunction with Table 1, p. 133):

...In (2) to (6) ... *Sweet* here ... has a neutral meaning ... In (7) to (11) there is synaesthesia, in that the generalised feature 'pleasant sensation-stimulating qualities' is transferred from taste to the other sensory organs 'hearing', 'smell', 'sight', and 'touch'. But also here there is a strong polarity force in each of the associations of the taste sense with the other senses. Thus Collins' dictionary

⁴ Williams (p. 471), however, does.
Table 1 (From Dirven, 1985: 105)
offers a positive definition only for *sweet music* viz. 'agreeable to the senses', but negative ones for *sweet air* viz. 'free from unpleasant odours', for *sweet soil*, viz. 'containing no sulphur compounds'. This negative orientation in the synaesthesia readings from (8) to (11) suggests that the meaning extension starts from the derived meanings in (2) to (5) rather than from the basic meaning of *sweet* in (1). (p.104-106)

It can also be seen in Table 1 that the wider metaphoric meanings of *sweet* are historically much older than the synaesthetic extensions. Perhaps this is somewhat surprising. If anything, one would expect the process of meaning extension to occur across the sensory domains first, before going beyond the domain of sensory experience to other domains, such as the domain of psychological experience or the domain of mental experience.

Although there are no Japanese dictionaries which list the citation dates for its entries, there would seem to be some evidence that Japanese has followed a similar pattern to English in its meaning extension of *amai*: The *amai-karai* opposition which we noted as being extended within the domain of taste, also occurs outside of the domain of sensory experience (i.e. not synaesthetically), as exemplified by the expressions *ten ga amai* 'marking is *amai* ('lenient')' and *ten ga karai* 'marking is *karai* ('severe')'.

Unlike English however, where the metaphoric extensions have started from the basic meaning of *sweet*, it would seem that the Japanese metaphorical
transfers have extended from the derived meanings of amai and not from its basic meaning. It is for this reason we note the absence of any favourable meanings of amai comparable to such expressions as *sweet thought*, *sweet dream* or *sweet child* in English; the 'equivalent' expressions of kangae ga amai 'too optimistic a way of thinking'; amai yume 'pipe dream', and kodomo ni amai 'indulgent to one's children', all possessing a negative nuance.

While we are in agreement with Dirven's comments --- that the derived meanings of *sweet* are a 'polarity item' --- as being applicable to the derived meanings of amai, we find that his claim "*sweet* here ... has a neutral meaning" (p.106) is an insufficient and inappropriate explanation for amai; for there is more to the derived meanings of amai than just its functioning at the 'negative' end of whatever dimension: In fact, there seems to be a recurrent component of meaning which suggests something to the effect that 'there is not enough of a particular quality present, relative to the norm'.

All curry, for example, is karai 'hot' as far as taste quality is concerned, but curry that is considered amai ('mild') is not just 'non-hot' with "neutral meaning"; indeed, amai karee *amai* curry' is curry which does not have enough of the karai 'hot' quality which is considered to be 'the norm' for curry. Similarly, soup which is described as shio ga amai 'salt is *amai*', is soup which is considered not to have enough salt in it (relative to the norm for soup). Thus, it can be seen that the extended meanings of amai within the taste domain differ greatly in this respect from its English counterparts.
This component of meaning (i.e. 'not enough of a particular quality, relative to the norm') is also found in the metaphoric extensions of *amai* (evidence that the metaphoric meanings have started from the derived meanings): *Kangae ga amai* may thus be interpreted as 'a way of thinking which is not (realistic) enough' relative to the average way of thinking; *Sen ga amai* 'cork (of a bottle) is amai', as 'a cork which is not (tight) enough (relative to the norm), etc. However, when it comes to the synaesthetic extensions, i.e. to the domain which has this component of meaning; the phrase *ha ga amai* 'blade is amai ('blunt') denoting a blade which does not have enough of a particular quality, i.e. 'sharpness', which is expected of blades.

It is curious to note that Dirven's comments on the 'aberrant' nature of the synaesthetic extension of *sweet* to the sound domain (i.e. *sweet music*) also applies to the transfer of *amai* to the sound domain in Japanese, where it appears that the basic meaning of *amai* is responsible for the extension, rather than the derived meanings (see *amai* p. 143).

**TASTE TO COLOUR**

The second case of 'aberrant' transference from the domain of taste occurs with *shibui* 'astringent'.

**Shibui**

Within the basic domain, *shibui* implies the presence of tannin, and denotes a rather unpleasant tactile-taste
sensation, such as is experienced when eating *shibugaki* 'astringent persimmons' or when drinking over-brewed green-tea. The unpleasantness associated with this taste quality is well captured in the expression *shibui kao o suru* 'make a wry face' (literally: 'to do an astringent face').

Apart from this expression however, *shibui* functions outside the domain of taste with favourable connotations; and it is no doubt due to this fact that the basic meaning of *shibui* and the derived meaning have contrary connotations, that has led Backhouse (1978:172) to conclude that semantically unrelated homonymy is involved. Indeed, for the present-day speaker of Japanese there would seem to be no meaningful connection between these two 'senses', although, as we shall later attempt to argue, they are historically related.

Suitably glossed as 'tasteful' in its extended context, *shibui* is a culture-specific term of aesthetic judgement denoting simple and unostentatious beauty, and in this usage its collocational range is wide, e.g. *shibui iro* 'tasteful colour', *shibui gara* 'tasteful design', *shibui bunshoo* 'tasteful style of writing', *shibui konomi* 'tasteful taste', etc. (Backhouse, 1978:172). Needless to say, what one considers 'tasteful' is largely a matter of personal preference, but within Japanese culture there tends to be consensus on what can appropriately be referred to as 'shibui'. Forming part of the basic aesthetic taste of Japanese culture, *shibui* manifests itself particularly in architecture,

---

5. Over-brewed green-tea may be described as either *shibui* 'astringent' or *nigai* 'bitter'. It all depends on what is being emphasized — the general unpleasantness of the taste quality (*nigai*) or the high tannin content (*shibui*) infused from the tea-leaves.

6. That is, 'taste' in the sense of having the ability to make discerning judgements about aesthetic, artistic, and intellectual matters.
interior design, ceramic arts, and other arts (Kawakita, 1961).

Within the domain of colour, *shibui* frequently functions in collocation with the nouns *iro* 'colour' and *iroai* 'shade of colour', and is used to refer to colours which may best be described as 'sober' --- colours one would usually associate with tweeds for instance, i.e. subdued greens, greys and browns. A *shibui iro* is not, therefore, a colour that one would find attractive at first blush; its appreciative value lying in its 'restrained' nature.

Other permissible, though less frequent, collocations with *shibui* involve nouns denoting specific colours: *shibui chairo* 'tasteful brown'; *shibui haitro* 'tasteful grey'. -Care must be taken here, however, to distinguish *shibui iro* 'tasteful colour' from the compound *shibuiro* (shibu- 'astringent' + iro 'colour) meaning 'tan colour', although conceivably, sober shades of *shibuiro* may well qualify as *shibui iro*.

Contrasting with *shibui* 'tasteful' in this domain is the term *hade*, which denotes what is commonly referred to in English as a 'loud colour'7; and thus, has a decidedly bad connotation. The collocational range of *hade* is similar to that of *shibui* --- applicability depending on the actual colour to which it refers: *hade na iro* 'loud colour', *hade na iroai* 'loud shade of colour, *hade na murasaki* 'loud purple'.

At first glance then, it would seem as if *shibui* and *hade* function as opposites. However, this is not

7. I assume the synaesthetic transfer here is not lost to the reader.
the case: The opposite of hade is \textit{jimi}, which, at least in the colour domain, may suitably be glossed as 'drab'. To be more precise, \textit{hade} and \textit{jimi} function as gradable opposites in the domain, giving rise to such expressions as: \textit{chotto hade na iroai} 'slightly loud shade of colour', \textit{chotto jimi na haiiro} 'slightly drab grey'. \textit{Shibui} on the other hand, by virtue of its ungradability, is not acceptable in such constructions: \*\textit{chotto shibui iroai} 'slightly tasteful shade of colour', \*\textit{chotto shibui haiiro} 'slightly tasteful grey'.

It must be pointed out that the transfer of \textit{shibui} is a particularly noteworthy case in that, as a taste-term which has extended its basic meaning to the domain of colour, it stands not only as an example of a transfer against the predicted pattern, but one where the new meaning has well and truly survived (in spite of Williams' claim that new transferred meanings tend not to be maintained if they go against the predicted pattern). In fact, \textit{shibui} has become so entrenched in the Japanese language as a colour-term that, when Japanese-style décor became popular in America during the 1950's it was borrowed into English as such (Miller, 1967:258).

It is interesting to note that Williams (p.471), relying on evidence from both Koojien (Japanese dictionary) and native informants, quotes \textit{shibui} as a transfer agreeing with his predicted pattern (parenthesized sense acceptable to informants but not cited in Koojien --- Williams):

\textit{shibui}: astringent; a not-gaudy colour; (voice quality)
A few comments are in order: Firstly, it would seem that Williams, on being supplied with an acoustic sense of shibui, has simply assumed that the transfer of shibui has progressed in accordance with his predicted pattern --- first as a regular transfer to the domain of sound, then as a second-order transfer to the domain of colour. By Williams' own admission as to his source of date, there appears no alternative explanation as to how he could have concluded that shibui was a predicted transfer. As we shall now try to argue, this in fact is probably not correct.

According to Kawakita (1961), the etymology of shibui is this: In its transferred sense, shibui originated among devotees of the tea ceremony during the Muromachi period (1333-1568) where it was first applied to the colour, design, shape, etc. of the austere tea-making utensils of the art. It is quite possible, we argue, that this usage of shibui is an extension of the same shibui the general populace had been using to describe the taste of (over-brewed) green-tea (see note 5).

Of course, the actual associative link between shibui green-tea (which had pejorative connotations) and shibui tea-making utensils (which had favourable connotations) cannot be certain, but one surmises that shibui took on its favourable connotation as it was first applied to the green-tea of the tea-ceremony, and from there, came to be applied to other objets trouvés associated with the tea-ceremony before extending its application to other domains of Japanese artistic culture, such as "the subdued voice of a master singer,

8. It must be noted here that Kawakita is not a linguist. Similar theories expounding the etymology of shibui in its aesthetic sense, however, can be found elsewhere, e.g. Kodansha Encyclopedia of Japan (1983).
[or] the disciplined performance of a seasoned actor" (Kodansha, Vol. 7, 1983: 85). Accepting this, we have yet to explain why shibui, as it was applied to green-tea, changed from having an unfavourable meaning to a favourable meaning.

Kawakita (1961:34), unknowingly, perhaps offers some insight into the matter:

Just as the astringent persimmon, left to its own devices, undergoes a metamorphosis into a sweet persimmon, so shibui implies that something that would otherwise have been sweet is being kept in check...This "keeping in check", of course, is no more repression than its complete freedom from inhibition. The aesthetic concept of shibui springs, rather, from an awareness of a balance between the two.

If we accept Kawakita's view that shibui implies restraint, then we may hypothesize that the meaning component of "keeping in check" as shibui was applied to shibugaki 'astringent persimmons', was transferred to the green-tea of the tea ceremony in order to express one kind of aesthetic sensibility.

To further support our argument that shibui extended its meaning (irregularly) to the colour domain first, before transferring to the sound domain as a (regular) second-order transfer, we reiterate the fact that as a general tendency (in Japanese, and in Williams' model for English) the number of colour-to-sound transferences among synesthetic adjectivals is of a disproportionately higher order than the number of sound-to-colour transferences; and hence, the chances of shibui transferring from the colour domain to the sound domain are much greater than vice-versa.

9. Such a progression of extension would support Bloomfield's (1933) well-known position that "refined and abstract meanings largely grow out of concrete meanings" (p. 429).
It goes without saying, of course, that if our position on the issue of *shibui*’s chronological movement of synaesthetic transfer is correct (and we strongly believe that it is), then Williams' calculations of 91% (i.e.90.9%) predicted rule agreement for Japanese is necessarily invalidated. The figure must now stand at 88.6%.

Although Williams' assumption that the transference of *shibui* should fit his predicted transfer-pattern has proved to be a rather unfortunate error, this example gives rise to the second point we wish to make concerning the reliability of Koojien (or any other Japanese dictionary for that matter) for the purpose of diachronic study, such as the one undertaken by Williams (1976) and used as one kind of "evidence" for his predictions of Japanese synaesthetic transferences.

According to Williams (p.470), "Koojien, one of the standard Japanese dictionaries, does list its entries in a *roughly* historical order" [my emphasis]. --- Yes, indeed roughly. One wonders why Williams should decide to investigate a language such as Japanese in order to support this theory of semantic change among sensory adjectives, given the fact that Japanese does not have a reference work like the Oxford English Dictionary, in which citation dates of earlier and later meanings are available; he is in fact forced to depend heavily on a reference work such as Koojien for diachronic information, which is far from reliable. Dictionary entries in rough chronological order are simply not good enough to build such a convincing argument for synaesthetic transfers as Williams' data would seem to suggest for Japanese.
In fact, that Japanese is unsuitable a language for such a diachronic study becomes obvious when one examines the dictionary entry for *shibui*. Williams does not reveal to which edition of Koojien he has referred, although it can only be either the first edition, published in 1955, or the second; the third, and most up-to-date, edition being published in 1983, seven years after Williams' article appeared in *Language*. In this article, Williams cites *shibui* 's transfer to the sound domain as having been supplied by a native speaker, which, indeed, would seem to suggest that *shibui* could possibly be a very recent transfer to this domain (and which further highlights Williams' error in assuming that *shibui* first transferred to the sound domain in accordance with his predicted transference-pattern). However, in the most recent edition of Koojien, interestingly, *shibui* is cited in its sound sense before its colour sense which, as we have argued, is not the path of semantic extension this term historically took.

The synaesthetic transfer of *shibui* therefore, not only stands to examplify the unreliability of Japanese dictionaries when it comes to diachronic study of the language, but also, must necessarily affect the credibility of Williams' entire evidence from Japanese.

**TOUCH TO SOUND**

*Amai*

As a synaesthetic transfer to the domain of sound, *amai* commonly occurs in collocation with at least five different referents: *merodit* 'melody', *muudo'ongaku*/*muudomyuuujikku* '(lit.) mood music', *koe* 'voice',
kotoba 'words', and sasayaki 'whisper'. Worthy of note is the fact that all referents of amai denote sounds either associated with music or sounds associated with the human 'communicative' voice. In other words, referents of amai in the sound domain appear to denote 'purposeful' or 'meaningful' sounds.

From the viewpoint of English, of considerable interest is that, similarly, the transfer of amai to the acoustic domain starts from the basic meaning of amai and not from its derived meanings within the taste domain. However, unlike English, amai as it patterns as an acoustic-term does not seem to be used in the (perhaps) expected sense of 'pleasantness' or 'agreeable' as sweet in, say, the collocation sweet music does. It is therefore not possible to express the translation equivalence of sweet voice or sweet music (i.e. 'pleasant-sounding') for example, in Japanese as *amai koe or *amai ongaku. A sweet voice in Japanese is utsukushii koe '(lit.) beautiful voice' (Kunihiro, 1970:329), while sweet music may be suitably rendered into Japanese as kokochiyoi ongaku '(lit.) pleasant music'.

Instead, amai as an acoustic-term tends to convey a number of different senses depending on its referent; the most common of these readings, it would seem, being 'soft' in the sense of 'romantic'.10 Amai koe , then, may be suitably glossed as 'romantic voice', i.e. the type of voice which creates an atmosphere of romance, and in this sense, amai is seen to function (quasi-) synonymously with the English loanword romanchikku.

10. Even the better Japanese dictionaries fail to mention this sense.
'romantic', e.g. romanchikku na koe 'romantic voice'. The collocations amai merodii 'romantic melody' and amai muudo'ongaku/muudomyuuujiku 'soft/romantic 'mood'-music' may thus be interpreted in similar fashion; the loanword muudomyuuujiku itself meaning 'music which enhances the atmosphere and swells the emotions' (Nihongoni natta Gaikokugo Jiten). Note that the more general level (i.e. more abstract) terms oto 'sound' and, perhaps surprisingly, ongaku 'music' cannot occur in collocation with amai: *amai oto 'romantic sounds', *amai ongaku 'soft/romantic music'.

The two nouns denoting vocal communicative sound, i.e. kotoba 'words' and sasayaki 'whisper' may also be used in the sense of 'romantic', although such interpretation tends to depend on the wider context since other readings are possible. In the first instance, amai sasayaki 'romantic whisper' denotes what is commonly referred to in English as 'sweet nothings', and need not necessarily be whispered:

(4) Watashi wa kare to amai sasayaki o kawashita
    I TOP boyfriend with romantic whisper OBJ exchange+PAST
    'I exchanged sweet nothings with my boyfriend'.

Used in this context, amai sasayaki is often qualified by koi 'love', i.e. koi no amai sasayaki 'sweet nothings of love', and is similar in meaning to amai kotoba 'romantic words':

(5) Watashi wa kare to amai kotoba o sasayakita
    I TOP boyfriend with romantic words OBJ whisper+RECIP+PAST
    'We whispered sweet nothings to each other'.


It must be noted however, that although both *amai sasayaki* and *amai kotoba* are used in the sense of 'romantic', it is only *amai sasayaki* which is frequently used in this context.

By now, no doubt, one is wondering why we have claimed that the extended sense of *amai*, as it patterns in the sound domain, has started from its basic meaning. To be sure, the link is not as obvious as that of *sweet music* for instance, where the component 'agreeable to the senses' of the basic gustatory meaning has transferred to the sound domain. However, there is intuitively a link, and the component of 'agreeable' or 'pleasant to the senses' as a component of the basic meaning of *amai* cannot be completely ruled out as not having transferred to the sound domain.

In fact, we would like to suggest that perhaps this was the original transferred meaning of *amai* as it referred to musical sounds, and from there, we conjecture, having been continuously associated with a particular kind of music which invoked a 'pleasant emotional response', such as *muudomyuujikku*, gradually took on the sense 'romantic'.

The second interpretation of *amai* in collocation with nouns denoting human communicative sounds is that of its basic sense 'sweet'. Once again, *amai sasayaki* 'amai whisper' and *amai kotoba* 'amai words' are similar in meaning and may be used interchangingly although, this time, it is *amai kotoba* which tends to be used more in this sense.

11. Most Japanese dictionaries will list this sense.
Amai kotoba 'sweet words' is rather transparent in meaning for the speaker of English, and refers to what is commonly known in English as 'honeyed words':

(6)  
*Suzuki san no okusan wa amai kotoba ni sasowarete kabu o katte shimatta.*

was tempted stock OBJ buy finish+PAST 'Mrs. Suzuki was tempted by honeyed words and ended up buying stock'.

(cf. amai kotoba in sentence (5)).

On the other hand, amai sasayaki, used in this sense, would appear to be rather opaque in meaning for the speaker of English:

(7)  
*Akuma no amai sasayaki ga kikoeru*  
devil GEN sweet whisper SUB can hear 'I can hear the devil's honeyed words'.

(i.e. I am being tempted by the devil).

(cf. amai sasayaki in sentence (4)).

That amai sasayaki cannot be readily interpreted by English speakers is simply due to the 'unfamiliar' referent sasayaki 'whisper'; the concept of 'sweetness of speech', however, is a very familiar one (evidenced by the fact that amai kotoba is interpretable). Indeed, it is fascinating to speculate why two unrelated languages such as Japanese and English should have this same transference pattern in their respective lexicons, and just what the associative link between sweetness and speech which conceals the evil intent of the speaker (i.e. deceptive speech) is.

One plausible hypothesis for this association has to do with the fact that sweetness in ripe fruit, etc. is a beneficial substance, standing in contrast to bitter
substances, which function to alert humans of their potential harmful effects if digested. Speech which is *sweet/amai* therefore, at least appears as if it is beneficial and harmless, when in fact this is not the case.

**Shiokarai**

In its basic meaning, *shiokarai* implies the presence of high salt content, and may thus be suitably glossed as 'salty', e.g. *umi no mizu wa shiokarai* 'the ocean's water is salty', *namida wa shiokarai* 'tears are salty'. When used in reference to food however, *shiokarai* tends to take on an unfavourable connotation in the sense that the salt content is too high for pleasant consumption: *kono shiru wa shiokarai* 'This soup is (too) salty'.

The form 'shiokarai', as such, does not extend its meaning outside the basic domain, but occurs in the domain of sound in the compound form *shiokaragoe* (*shiokara-* 'salty' + *koe* 'voice') to denote a type of voice quality that is gratingly harsh to the ear, i.e. a 'hoarse voice', and in this context *shiokaragoe* is seen to function similarly to the onomatopoetic compound *garagarakoe* (*garagara-* '(onomat.) unpleasant rattling sound' + *koe* 'voice').

A fact about *shiokaragoe* (hence *garagarakoe*) is that it not only refers to a quality of voice which has resulted from illness or strained vocal chords through shouting, but may also denote (at least what would appear to be) a natural voice (i.e. permanent)
quality. In this respect, shiokaragoe differs in meaning from the verbal compound shiwagaregoe, or its variant shagaregoe (shiwagare-/shagare- 'become hoarse' + koe 'voice') 'hoarse voice' (literally, a 'became-hoarse voice') in that, although applicable to the same voice quality, shiwagaregoe/shagaregoe cannot be used to refer to a natural voice quality (at least as far as it can be determined). Thus, a shagaregoe no hito 'hoarse -voiced man' is one who is recognized as not always having had that voice quality.

From the viewpoint of English, a voice described by the taste-quality 'salty' is indeed a 'foreign concept', although one feels certain that if one were to ask a native speaker of English to choose any term in the English language denoting a taste-quality which would be 'appropriate' to describe the sound of a hoarse voice, there is little doubt that 'salty' would be the most probable candidate. It is more difficult, however, to explain why this should be so. The immediate question, of course, is what common attribute, or attributes, have native Japanese speakers felt exist between the taste-term shiokarai and the sound of a 'hoarse voice'?

Since shiokarai does not refer to other types of sound quality, our hypothesis for the existence of this extension is that the taste-term shiokarai 'salty' has merely come to be associated with hoarseness of voice because it parallels the effect that substances of high salt content, such as salt water, has on voice quality. No hypothesis more plausible than this can be advanced.
SENSE OF SMELL
### Synaesthetic Adjectivals of Smell

<table>
<thead>
<tr>
<th>SMELL</th>
<th>TASTE</th>
<th>TOUCH</th>
<th>DIMENSION</th>
<th>COLOUR</th>
<th>SOUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOROKUSAI 'mud-smelling'</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AOKUSAI 'grass-smelling'</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NAMAGUSAI 'raw-smelling'</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KOOBASHII 'fragrant'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
CHAPTER SIX

SENSE OF SMELL

Williams' model of semantic extension among sensory adjectives in English predicts that there are no primary olfactory words (i.e. non which have historically originated in the domain) which have transferred to other sense domains. Williams admits (p. 474) to having omitted from his survey words derived from other words, such as muddy, reedy, and lemony --- and this, we feel, is a serious error on Williams' part.

What this means, basically, is that Williams has excluded candidates for smell words, such as smoky, woody, earthy, etc., solely on the grounds of morphological makeup, yet these are the very words which offer examples of legitimate transfers from the olfactory domain to the taste domain. In fact, we contend that it would be rather surprising if there were no smell words which did not transfer to taste, especially given the fact that taste and smell experience is so intimately related. Note that by our question-frame introduced in the previous chapter What does it taste like? delimiting the domain of taste, a response such as It tastes smoky (woody, earthy, etc.) is acceptable to most English speakers, and thus qualifies as a taste-term --- a synaesthetic transfer from the olfactory domain.

Backhouse's (1978) research into the taste domain in Japanese has shown that to the question-frame X wa donna aji ga suru? (where X stands for a generic noun), the response-frame reveals at least three different adjectivals which may be considered synaesthetic olfactory

--- At times, no doubt, it is difficult to state with certainty whether a term originally belongs to the taste or smell domain. With a term such as smoky, for example, there would seem to be no confusion --- before one can consider something to taste smoky, one must first have experienced the smelling of smoke.
transfers, i.e. *aokusai* '(lit.) grass-smelling', *dorokusai* '(lit.) mud-smelling', and *koobashii* '(lit.) fragrant'; complete responses to the Japanese question-frame ranging from *tomato wa chotto aokusai* 'tomatoes are a bit grassy-flavoured'; *koi wa dorokusai* 'carp is muddy-flavoured'; and *hoojicha wa koobashii* '(type of) tea is fragrant-tasting'. To these terms we may also add *namagusai* 'fishy' (literally: 'smelling of fish'): *sakana wa namagusai* 'fish is fishy-tasting', a seemingly tautologous construction, although quite acceptable to native speakers.

Most of these words, it can be seen, are based on the morpheme -*kusai* 'smelling', but in response to the question-frame *X wa donna aji ga suru?*, *kusai* 'it smells' by itself (i.e. as a free morpheme) is considered an inappropriate reply (Backhouse, 1978:156). What we may conclude by this is that *kusai* does not synaesthetically transfer to the taste domain; such a response giving rise to a semantic clash between the sensory domains of taste and smell.

***********
結論

CONCLUSION
CHAPTER SEVEN

CONCLUSION

The aim of this chapter is to simply expose the facts and figures of Japanese synaesthetic adjectivals, offering --- as far as we know --- the most extensive analysis on the subject to date. One word of warning however: Given the various uncertainties inherent in a study such as the present one, especially when considering the fact that a reliable reference work for the Japanese language is non-existent for such purposes, the actual calculations presented in this chapter must necessarily be considered tentative. Yet, at the same time, it must not be overlooked that these figures reveal significant trends --- i.e. that the movement of synaesthetic metaphor conforms to a basic pattern --- trends similar to those presented by Williams for his model of synaesthetic adjectives in English.

* * * *

Our original corpus consists of 188 Japanese adjectivals describing sensory experiences (see Appendix for the full list). While exhaustiveness cannot be claimed, we maintain that all commonly used adjectivals (i.e. the one which are most likely to transfer) are included.
For certain sensory words, however, categorization into one of the five sense domains proved a difficult task: The basic meaning of certain terms, such as koi cannot be established with absolute certainty; and some adjectivals which are obviously related to sensory experience just do not seem to fit neatly into any one sensory domain — for instance, *ikigurushii* 'difficult in breathing' has been characterized as a touch-term. No doubt there will be some who disagree with the way particular items have been grouped: Such are the inherent problems of forced classification.

Of the 188 adjectivals in our corpus, 55 (or 29%) are synaesthetic (i.e. have extended their meanings to other sensory domains. A breakdown of the synaesthetic and non-transferring adjectivals into their appropriate sensory domains is as follows:

**Table 7.1**

SYNAESTHETIC AND NON-TRANSFERRING ADJECTIVALS ACCORDING TO DOMAIN

<table>
<thead>
<tr>
<th>FROM TO</th>
<th>DIMENSION</th>
<th>COLOUR</th>
<th>SOUND</th>
<th>TOUCH</th>
<th>TASTE</th>
<th>SMELL</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYNÄSTHETIC</td>
<td>13 (24%)</td>
<td>10 (18%)</td>
<td>3 (5%)</td>
<td>17 (31%)</td>
<td>8 (15%)</td>
<td>4 (7%)</td>
<td>55 (29%)</td>
</tr>
<tr>
<td>NON-TRANSFERRING</td>
<td>15 (11%)</td>
<td>43 (32%)</td>
<td>18 (14%)</td>
<td>33 (25%)</td>
<td>12 (9%)</td>
<td>12 (9%)</td>
<td>133 (71%)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>28</td>
<td>53</td>
<td>21</td>
<td>50</td>
<td>20</td>
<td>16</td>
<td>188 (100%)</td>
</tr>
</tbody>
</table>
Table 7.1 reveals the following information:

(1) *Of the vocabulary of sensory experience in Japanese, there is a preponderance of colour-related and touch-related terms.*

(2) *Vocabulary from the domains of sound and smell tend not transfer to other sense domains.* -- Williams notes this same tendency among sound- and smell-terms in English.

The 55 synaesthetic adjectivals in our corpus are responsible for a total of 72 intersensory transferences in Japanese; this figure includes a number of second- and third-order transfers. The following table enumerates these synaesthetic extensions as they originate from their basic domains. For example, *koi* (basic domain of colour) has transferred to touch, taste, and smell. We count this as three transferences originating from the domain of colour, rather than consider *koi* as a (second-order) touch-term which has extended its meaning to taste, and *koi* as a (third-order) taste-term which has transferred to smell:
Table 7.2 reveals, for example, that from the original domain of dimension there has been a total number of 18 intersensory transferences (this, of course, does not mean that 18 dimensional terms have transferred. As we have seen in Table 7.1 there are only 13 synaesthetic adjectivals of dimension); that 3 of these extensions are to the colour domain, 9 to the sound domain, and so on.
The Table also highlights the following tendencies:

(3) **There are no transfers to the domain of dimension from any of the other sensory domains.**
- This trend agrees with Williams' generalization for synaesthetic transfer movement, although for English, Williams cites one exception: TOUCH TO DIMENSION: *crisp*.

(4) **The domain of sound receives the greatest number of transfers, followed by colour.** - The Japanese data supports Williams' thesis that movement of sensory terms is from the less advanced to the higher modalities of sight and hearing.

Of the total number of 72 intersensory transfers however, there are a number of extensions which are exceptions to Williams' predicted pattern of transfer movement. Again, enumerating (this time, tentatively!) these synaesthetic exceptions as they originate from their basic domain, the frequencies are as follows:

**TABLE 7.3**
SYNAESTHETIC EXCEPTIONS TO WILLIAMS' MODEL

<table>
<thead>
<tr>
<th>/FROM</th>
<th>DIMENSION</th>
<th>COLOUR</th>
<th>SOUND</th>
<th>TOUCH</th>
<th>TASTE</th>
<th>SMELL</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>REGULAR TRANSFERS</td>
<td>12 (67%)</td>
<td>9 (57%)</td>
<td>3 (100%)</td>
<td>23 (100%)</td>
<td>10 (83%)</td>
<td>- (79%)</td>
<td>57</td>
</tr>
<tr>
<td>EXCEPTIONS</td>
<td>*6 (33%)</td>
<td>*3 (25%)</td>
<td>0 -</td>
<td>0 -</td>
<td>2 (17%)</td>
<td>4 (100%)</td>
<td>*15</td>
</tr>
<tr>
<td>TOTAL</td>
<td>18</td>
<td>12</td>
<td>3</td>
<td>23</td>
<td>12</td>
<td>4</td>
<td>72</td>
</tr>
</tbody>
</table>

1. This exception, however, may no longer be in present-day English.
As far as general tendencies for synaesthetic exceptions are concerned, Table 7.3 reveals that:

(5) **There are no exceptions originating from the sound or touch domains.**

What the Table **fails** to record however --- since it only deals with 'concrete' exceptions against Williams' model --- is the fact that (at least according to our criterion) there are no touch-terms in Japanese which have transferred to the taste-domain (see Table 7.2) --- a significant departure from Williams' model for English.

Further, Table 7.3 also reveals that there is a disproportionate percentage of exceptions originating from the domains of smell (100%), dimension (33%) and colour (25%). The figure for the exceptions from the domains of dimension and colour (asterisked) however, is highly misleading due to our method of calculation, and amendments should be made. (The figure for smell, on the other hand, is accountable: This is due to the criterion we employed to define the limits of the domain of taste in Japanese --- see Ch.4).

There are only a handful of dimension and colour terms which have transferred a second and third time, all involving the movement of the order touch-to-taste or taste-to-smell, and it is obvious that these post-first-order transferences are in fact regular, and therefore should not be counted as irregular extensions originating from the basic domains of either dimension or colour. This being the case, exceptions from the dimension and colour domains may be revised as shown in Table 7.3.1:
TABLE 7.3.1
FIRST ORDER SYNAESTHETIC EXCEPTIONS TO WILLIAMS' MODEL²

<table>
<thead>
<tr>
<th>/FROM</th>
<th>DIMENSION</th>
<th>COLOUR</th>
<th>SOUND</th>
<th>TOUCH</th>
<th>TASTE</th>
<th>SMELL</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXCEPTIONS</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>4</td>
<td>10</td>
</tr>
</tbody>
</table>

The revised version of irregular transferences thus reveals that, in total, the Japanese language (synchronically) manifests 10 exceptions to Williams' predicted pattern of intersensory extensions; this figure representing 17% of all first- and post-first-order transfers among Japanese synaesthetic adjectivals.³

2. It is interesting to note that apart from the domains of colour and smell, Williams lists 11 first-order irregular transfers for English, originating from the remaining domains of dimension, sound, touch, and taste. This does not mean to say, however, that these exceptions present themselves in present day English.

3. The ten irregular exceptions to Williams' model are:

- DIMENSION TO (COLOUR TO) TOUCH:⁴ usui
- DIMENSION TO (COLOUR TO) TASTE: fukai
- DIMENSION TO TASTE: sensai
- COLOUR TO TOUCH: koi
- TASTE TO TOUCH: amai
- TASTE TO COLOUR: shibui
- SMELL TO TASTE: aokusai, dorokusai, namagusai, koobashii.

4. This transference is theoretically an irregular COLOUR TO TOUCH transfer (since we are assuming that usui has transferred from the colour domain with its antonym koi). While this must necessarily 'rearrange' the figures presented in Table 7.3.1, it does nothing to affect the overall results.

(Contd.)
Note that most of these transfers can be accounted for:

(i) SMELL TO TASTE transfers have 'arisen' due to the criterion employed in this thesis to delimit (and define) the taste domain in Japanese. (cf. Williams' approach to English smell-terms, where morphological makeup played a major part in excluding legitimate terms from his data).

(ii) The two DIMENSION TO TASTE transfers are somewhat questionable: *Fukai* as a taste descriptor may not be acceptable to all native speakers; *sensai*'s status as an original term of dimension is not clear-cut.

(iii) The transference from TASTE TO COLOUR (*shibui*) has a historically 'unique' development (-cultural synaesthesia?).

This leaves us with:

(iv) The TASTE TO TOUCH transfer (*amaï*), whose status in the tactile domain is one of instability, highly indicative that it is indeed an irregular transfer -- but one which will not be maintained as such in the future language.

(v) The DIMENSION TO (COLOUR TO) TOUCH TRANSFER *usui*, AND ITS ANTONYM, THE COLOUR TO TOUCH transfer *koi*. --It is remarkable, to say the least, that Williams should cite *thin* as the only unambiguous exception to his model for English!
Among first-order irregular transfers against Williams' model, the domain of taste is the recipient of the greatest number of exceptions:

Table 7.4
FIRST-ORDER MOVEMENT OF IRREGULAR TRANSFERS

<table>
<thead>
<tr>
<th>FROM/TO</th>
<th>DIMENSION</th>
<th>COLOUR</th>
<th>SOUND</th>
<th>TOUCH</th>
<th>TASTE</th>
<th>SMELL</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIMENSION</td>
<td>-</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>COLOUR</td>
<td>-</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>TASTE</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>SMELL</td>
<td>4</td>
<td>-</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1</td>
<td>3</td>
<td>6</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>

And finally, the overall donor/recipient ratio of transfers to and from the six sensory domains reveals that terms from the domain of dimension find it easiest to transfer, followed by terms from the touch domain:

Table 7.5
DONOR/RECIPIENT RATIO OF TRANSFERS

<table>
<thead>
<tr>
<th>DONOR DOMAIN (A)</th>
<th>18</th>
<th>12</th>
<th>3</th>
<th>23</th>
<th>12</th>
<th>4</th>
<th>72</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECIPIENT DOMAIN (B)</td>
<td>0</td>
<td>16</td>
<td>37</td>
<td>3</td>
<td>8</td>
<td>8</td>
<td>72</td>
</tr>
<tr>
<td>A/B</td>
<td>∞</td>
<td>0.75</td>
<td>0.08</td>
<td>7.66</td>
<td>1.5</td>
<td>0.5</td>
<td></td>
</tr>
</tbody>
</table>
The complete ranking of domains from which sensory terms find it easier to transfer is as follows:

(1) DIMENSION
(2) TOUCH
(3) TASTE
(4) COLOUR
(5) SMELL
(6) SOUND

The ramifications of these results for future change (including the introduction of new sensory words which may enter the language through borrowing) are obvious: Words denoting taste-qualities, for example, have a greater potential for intersensory transference than terms denoting sound-qualities.

It must be noted, however, that the above order of donor transfers by domain does not reflect that of Williams' calculations for synaesthesia in English, where sound-terms are more likely to transfer than smell-terms. This discrepancy may be put down to the fact that Williams has excluded legitimate smell-words from his data simply on the basis of morphological make-up (see Chapter 6).

Table 7.5 also indicates that the sound domain is the recipient of the greatest number of transfers; the ranking of domains in terms of the number of received sensory terms almost mirror-imaging the order of domains in terms of the number of donor transfers:
The donor-recipient frequencies yield a number of significant issues. The first point to note is that

(1) The domains of sound and colour (sight) receive the most transfers.

This supports Williams' generalisation for English that "Sensory words...have systematically transferred from the physiologically least differentiating, most evolutionary primitive sensory modalities to the most differentiating, most advanced" (Williams, 1976, pp.464-465).

The sense of hearing and vision, it has been claimed (Marks, 1978), both evolved from an earlier touch sense. It is thus interesting to note that

(2) The domain of touch receives practically no transfers (i.e. three).

yet ranks highly as a donor domain, with all touch-term extensions in Japanese transferring to the evolutionary higher modalities of sound and sight (colour). This being the case, Abelin (1988) may well be justified in questioning "Where, then, do TOUCH adjectives come from?" (p.30).
To be sure, there are many touch-terms in Japanese which are arbitrary (and there are many touch-terms. See Table 7.1), but there is also quite a few which may be regarded as mimetic, e.g. *gori-gori* 'hard', *sara-sara* 'coarse', *beta-beta* sticky', *chiku-chiku* 'pricking', etc. As Abelin (1988) observes for Swedish, and the same may be said for Japanese, it is the mimetic-type adjectivals which do not usually extend to the other sensory domains.

Furthermore, that the domain of sound should rank highest as the recipient domain of synaesthetic transfers, and that these transfers should come from the donor domain of touch (Table 7.2) may not, in fact, be entirely due to evolutionary development, as Williams suggests. As Abelin (1988:31) notes "Onomatopoeia is used for imitating sounds, (resulting in interjections, nouns and verbs), but not for characterizing sounds (resulting in adjectives)" [my emphasis] --- and it is perhaps because of this, that the sound domain is forced to borrow from other semantic domains.

***

A natural continuation of this study into lexical synaesthesia would be to investigate sensory extensions as they pattern beyond the domain of sensory experience. Many sensory adjectivals which are not necessarily synaesthetic, offer interesting extensions to such domains as emotion and personal attributes; for example, a person may be described as *nibui* '(lit.) dull' (touch),
kusai '(lit.) bad-smelling' (smell), akarui '(lit.) light, bright' (colour), shibui (lit.) astringent' (taste), or yakamashii '(lit.) noisy' (sound). Extensions of mimetic touch-terms in Japanese which tend not to transfer synaesthetically, also offers another fruitful area of investigation.
### APPENDIX

<table>
<thead>
<tr>
<th>DIMENSION</th>
<th>COLOUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>chiisai</td>
<td>shiroi</td>
</tr>
<tr>
<td>chiisa-na</td>
<td>shiroppoi</td>
</tr>
<tr>
<td>ookii</td>
<td>masshiroi</td>
</tr>
<tr>
<td>ooki-na</td>
<td>masshiro-na</td>
</tr>
<tr>
<td>dekai</td>
<td>kuroi</td>
</tr>
<tr>
<td>semai</td>
<td>kuroppoi</td>
</tr>
<tr>
<td>hiroi</td>
<td>makkuroi</td>
</tr>
<tr>
<td>dadappiroi</td>
<td>makkuro-na</td>
</tr>
<tr>
<td>mijikai</td>
<td>dosuguroi</td>
</tr>
<tr>
<td>nagai</td>
<td>akai</td>
</tr>
<tr>
<td>hosonagai</td>
<td>makka-na</td>
</tr>
<tr>
<td>hyoronagai</td>
<td>akaruroi</td>
</tr>
<tr>
<td>nagapposoi</td>
<td>aoi</td>
</tr>
<tr>
<td>hikui</td>
<td>massao-na</td>
</tr>
<tr>
<td>takai</td>
<td>buruu-no</td>
</tr>
<tr>
<td>kodakai</td>
<td>aojiroi</td>
</tr>
<tr>
<td>uzutakai</td>
<td>aoguroi</td>
</tr>
<tr>
<td>asai</td>
<td>kiiro-no</td>
</tr>
<tr>
<td>fukai</td>
<td>kiiro</td>
</tr>
<tr>
<td>hosoi</td>
<td>midori-no</td>
</tr>
<tr>
<td>kabosoii</td>
<td>chairo-no</td>
</tr>
<tr>
<td>sensai</td>
<td>chairo</td>
</tr>
<tr>
<td>futoi</td>
<td>kogecha-no</td>
</tr>
<tr>
<td>usui</td>
<td>momoiro-no</td>
</tr>
<tr>
<td>atsui</td>
<td>mizuro-no</td>
</tr>
<tr>
<td>buatsui</td>
<td>pinku-no</td>
</tr>
<tr>
<td>chikai</td>
<td>haiiro-no</td>
</tr>
<tr>
<td>tooi</td>
<td>toomei</td>
</tr>
<tr>
<td></td>
<td>futomeita</td>
</tr>
<tr>
<td>TOUCH</td>
<td>SURFACE</td>
</tr>
<tr>
<td>--------</td>
<td>------------</td>
</tr>
<tr>
<td>nibui</td>
<td>samui</td>
</tr>
<tr>
<td>surudoi</td>
<td>hadasamu</td>
</tr>
<tr>
<td>yawarakai</td>
<td>samuzamutoshi</td>
</tr>
<tr>
<td>katai</td>
<td>atsui</td>
</tr>
<tr>
<td>komakai</td>
<td>mushiatsu</td>
</tr>
<tr>
<td>kimekomakai</td>
<td>atsukurushii</td>
</tr>
<tr>
<td>arai</td>
<td>suzushii</td>
</tr>
<tr>
<td>nameraka-na</td>
<td>suzushige-na</td>
</tr>
<tr>
<td>yurui</td>
<td>atatakai</td>
</tr>
<tr>
<td>kitsui</td>
<td>namaatatakai</td>
</tr>
<tr>
<td>kawaita</td>
<td>nurui</td>
</tr>
<tr>
<td>nureta</td>
<td>namanurui</td>
</tr>
<tr>
<td>shimeppoi</td>
<td>tsumetai</td>
</tr>
<tr>
<td>shimetta</td>
<td>atsui</td>
</tr>
<tr>
<td>moroi</td>
<td>hyakko</td>
</tr>
<tr>
<td>togatta</td>
<td>netsuppoi</td>
</tr>
<tr>
<td>togetogeshii</td>
<td></td>
</tr>
<tr>
<td>subekkoi</td>
<td></td>
</tr>
<tr>
<td>nechikko</td>
<td></td>
</tr>
<tr>
<td>nechittoshita</td>
<td></td>
</tr>
<tr>
<td>nebakkoi</td>
<td></td>
</tr>
<tr>
<td>SOUND</td>
<td>TASTE</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------</td>
</tr>
<tr>
<td>shizuka</td>
<td>amai</td>
</tr>
<tr>
<td>seishuku</td>
<td>amattarui</td>
</tr>
<tr>
<td>seijakutoshi</td>
<td>karai</td>
</tr>
<tr>
<td>kansei</td>
<td>shiokarai</td>
</tr>
<tr>
<td>sawagashii</td>
<td>shoppai</td>
</tr>
<tr>
<td>soozooshii</td>
<td>suppai</td>
</tr>
<tr>
<td>urusai</td>
<td>amazupai</td>
</tr>
<tr>
<td>yakamashii</td>
<td>sui</td>
</tr>
<tr>
<td>monosawagashii</td>
<td>nigai</td>
</tr>
<tr>
<td>ketamashii</td>
<td>horonigai</td>
</tr>
<tr>
<td>kashimashii</td>
<td>shibui</td>
</tr>
<tr>
<td>kandakai</td>
<td>egui</td>
</tr>
<tr>
<td>kanbashitta</td>
<td>egarappoi</td>
</tr>
<tr>
<td>mimizawari</td>
<td>kudoi</td>
</tr>
<tr>
<td>kugumotta</td>
<td>shitsukoi</td>
</tr>
<tr>
<td>hibiku</td>
<td>umai</td>
</tr>
<tr>
<td>hibikuwataru</td>
<td>oishii</td>
</tr>
<tr>
<td>shi wagareta</td>
<td>bimi</td>
</tr>
<tr>
<td>kikinikui</td>
<td>mazui</td>
</tr>
<tr>
<td>kikizurai</td>
<td>ajikenai</td>
</tr>
<tr>
<td>kikiyasui</td>
<td></td>
</tr>
</tbody>
</table>


Backhouse, A.E., 'Have All the Adjectives Gone?' in Lingua, 1984, 62.


Bloomfield, L., Language (New York: 1933)


Brown, R.W., Raymond A. Leiter, and Donald C. Hildum, 'Metaphors from Music Criticism' in *Journal of Abnormal and Social Psychology*, 1957, 54.


Lakoff, George and Mark Johnson, Metaphors We Live By (Chicago : The University of Chicago Press, 1980).


Sully, James, 'Harmony of Colours' in *Mind*, 1879, 4.


Tanaka, Akio, *in Press, Words and Meaning*.


