

Form and Meaning: Their Distinction, Intersection, and Interplay

Hsin-I Hsieh

University of Hawaii

ABSTRACT

This paper is mainly concerned with the way form and meaning interact in the grammar, especially as form and meaning are construed as sentences and their interpretations. (i) We point out that the semantics of a grammar cannot be exhaustively represented by its syntax; (ii) we suggest that cognitive semantics and formal syntax constitute two complementary approaches to the grammar, since one emphasizes meaning and the other form; and (iii) we discuss some prominent types of syntax-semantics mismatch, referring especially to Tang's (1991) work on NP-and QP-incorporations.

Key Words: Form, Meaning, Interaction, Ting-chi Tang

0. Introduction

The central concern of this paper is with the intricate relation of form and meaning, especially as form and meaning are manifested as sentences and their interpretations.¹ We divide our discussion into four sections. In section 1, we discuss the distinction between form and meaning, claiming that an image loses its freshness once it is given a conventionalized form, and that the meaning configurations in a language cannot be exhaustively accessed through any matching formal representations. In section 2, we discuss the interconnection between meaning configurations in a language and their matching formal expressions, and we point out that cognitive semantics and formal syntax can be studied as

1. I am grateful to two anonymous reviewers. One has very kind and encouraging words, and the other pointed out some minor mistakes or inadequacies and suggested corrections and improvements, which I have made accordingly.

two distinct though interconnected domains. In section 3, we concentrate on the interplay between semantics and morpho-syntax. After examining several kinds of syntax-semantics mismatch, we focus on a striking kind of syntax-semantics discrepancy as revealed in Mandarin sentences involving NP- and QP-incorporations, especially as they are discussed in Tang (1991). In connection with these two patterns of incorporation, we remark on the issue of psychological reality of postulated transformation rules, and on how grammatical rules can interact. We suggest that formal claims, especially when they have psychological plausibility, such as manifested in syntactic variation caused by interaction, are linguistically relevant and important, because they can serve to inspire psycholinguistic experiments as well as computer applications. In the final, fourth section, we make a very brief conclusion.

1. The Distinction of Form and Meaning

Poetry seduces, enchants, and mesmerizes with fresh and surprising images. A poetic image may come in any form: it may be a sensual evocation as in 'I stood waiting for you in the garden—holding all myself in my arms like a basket of flowers' (F. Scott Fitzgerald: *Tender Is The Night*), a perceptive observation as in 'his eyes leaking isolated and unpunctual tears' (F. Scott Fitzgerald: *The Great Gatsby*), or even an ingenious structuring as in 'As the stars hang down, the flat field becomes vast; as the moonlight surges in the water, the huge river flows on' (Tu Fu: 'Sentiment on a journey night') (*Xing1 cui2 ping2 ye3 kuo4, yue4 yong3 da4 jiang1 liu2*) (gloss: star-drop-flat-field-broad, moon-surge-big-river-flow). No matter how the poetic effect is generated, poetry makes us aware that there are as many fresh and surprising images as our imagination can reach them and our words can express them. As a poetic phrase becomes a cliché, a fresh image is made stale through conventionalization. We pay for the convenience of ready expression with the loss of freshness in image. The trade-off between fresh meaning and convenient form is not limited to the language of poetry, but occurs in ordinary language as well. Consider, for example, such originally poetic expressions as *fang4xin1* 'lay down the heart', *dan1xin1* 'shoulder up the heart', *guan1xin1* 'secure the heart for someone', *yong4xin1* 'use the heart'. These expressions originally all depict dramatic feelings or activities involving a person's heart or thought, but they now only express such mundane ideas as 'cease to worry', 'worry', 'concern', and 'with care'. But think of how many more expressions of the form *X-xin* we could now have if the history of Chinese had been somewhat different and allowed this general pattern to spread.

For example, we could have **tiao1xin1* 'to stir the heart: to seduce', **mo2xin1* 'to grind the heart: to torture', **qiao1xin1* 'to tap at the heart: to tantalize', etc. To be sure, in place of these missing forms, we may have *yin3you4*, *zhe2mo2*, *tiao3dou4*, etc., but the fact remains that these images are not accessible through expressions of the form X-*xin* and that the substitute forms are rather expressions for slightly or substantially different images. In other words, X-*xin* as a form can provide access to only some but not all the images that in principle can be expressed by it.

This limited accessibility illustrates a fundamental and profound truth in the relation between image and expression, or between meaning and form: there are more meanings than are accessed through their corresponding forms. Extending this discrepancy a bit, we can say that there are more things that we can imagine than methods we can devise to describe or obtain them. Freud's theory and enterprise in psychoanalysis have in recent years come increasingly under criticism and attack, but his one insight may still last, the idea that an infant starts out his/her life with an assumption about an exact correspondence between a world of infantile fantasy and a world of external reality. Since only some infantile wishes can find their expressions in reality, the child must grow out of his erroneous assumption in order to mature into a sound-minded adult. Just as only certain infantile or even adult fantasies are supported by hard realities, only certain meanings can be accessed by linguistic forms. A person's life force lies largely in this tug of war between giving up this fantasy world too willingly and giving it up too reluctantly. No one is likely to be completely mature, realistic, and rational. Complete maturity in a person could mean death, for only in death could a person give up dreaming.

In his popularizing volume on Western philosophy, *A History of Western Philosophy*, Bertrand Russell gave a brief answer to the question why the Greek civilization was so great. He said, "It was the combination of passion and intellect that made them great, while they were great. Neither alone would have transformed the world for all future time as they transformed it" (1945:21). From the same perspective, Russell criticized Aristotle this way: 'The errors of his predecessors were the glorious errors of youth attempting the impossible; his errors are those of age which cannot free itself of habitual prejudices. He is best in detail and criticism; he fails in large construction, for lack of fundamental clarity and Titanic fire.' (1945:161) Russell seemed to have believed that an intense interplay between passion and reason is the best way to achieve creativity in life and civilization. However, another approach to creativity seems to be one in which the dream world and the reality world are realized as one and the

same. There, meaning and form are ingeniously equated with each other. Since forms are available, every meaning is consequently accessible through a form and this ignorance as idealization tends to lead to a mechanistic-controlling view of the outside world.

Descartes can be viewed as a genius articulating this kind of idealization in a scientific way. Some philosophers credited Descartes with pioneering the modern age of science and technology for his invention of analytical geometry, which is a mathematical system in which every point in the plane has a unique expression as a pair of values along the two mutually perpendicular axes. If a point is a meaning, its formal description is the order pair $\langle x,y \rangle$ representing its measurement values in the x and y axes. If everything imaginable is describable, and further if everything describable is subject to manipulation, then the physical world at large is subject to human manipulation and control. With such a belief, the modern era of science and technology seems all but inevitable. Advance in science and technology has however convinced the scientific community that this idealization is useful but untrue, that there are many things out there in the physical world that at present are beyond human understanding, manipulation, or control.

Descartes's geometrical plane is in some sense 'consistent' and 'complete'. A deductive system is consistent if every provable theorem (in it) is true, and complete if every true theorem is provable. Although no deductive procedures are employed in representing points in the plane as pairs of the form $\langle x,y \rangle$, the Cartesian plane is in some loose sense both consistent and complete, because every pair $\langle x,y \rangle$ expresses a point (hence consistent), and every point can be expressed as a pair $\langle x,y \rangle$ (hence complete). Extending the terms 'consistency' and 'completeness' a little, one can say that a system is consistent if every form (in it) has a meaning, and complete if every meaning (in it) has a form.

Strictly speaking, however, the consistency of a logical, deductive system cannot be demonstrated with certainty, for two reasons. First, a logical system, like any language, cannot assert its own consistency but needs a meta-language to make such an assertion. Second, whatever meta-language is adopted, that meta-language is based on some natural language, whose consistency lacks a more powerful language to demonstrate. But the completeness of a logical system can be demonstrated.

In 1930, Kurt Godel proved the completeness theorem for propositional calculus. Propositional calculus is complete in the sense that a formula is true if and only if it is provable. If truth is equated with meaning, and proof with form, Godel's completeness theorem can be interpreted as showing that, in

propositional calculus, every meaning has an expressive form and every form expresses a meaning. A year later, in 1931, Godel proved the incompleteness theorem. According to this theorem, in quantifier first-order predicate logic argumented with a number theory, there is at least a true theorem that cannot be proved. Taken together, Godel's two famous theorems seem to imply that when a language is not sufficiently powerful, every meaning in it can be expressed by a form, but when the language is sufficiently powerful, some meanings do not get expressed by any forms. Natural languages are more than sufficiently powerful, and so in any natural language there are more meanings than can be expressed by forms. In other words, there are more, and perhaps vastly more, images in a natural language than can be expressed by morpho-syntactic representations. To those who write poems, paint pictures, compose songs, or conduct any other forms of creative work, this conclusion seems intuitively clear, because there are endless poems, pictures, and songs to create. But Godel's technical demonstration of this intuition has the immense effect of giving it its final scientific approval.

2. The Intersection of Form and Meaning

Since form and meaning are two distinct components in a language, whether considered as a formal logical system or as a natural language, it is strictly speaking a mistake to say that form and meaning intersect. By saying that form and meaning intersect we actually mean that there are certain meaning configurations that are expressed by formal configurations, and conversely there are certain formal arrangements that express meaning arrangements. It is quite conceivable that, given time, a natural language can come up with any desired meaning pattern together with its matching formal pattern when the need arises. But it is likely that a natural language can afford to create only as many images and matching expressions as it needs in a particular period of its history, economy being a survival demand. To see that a language does not store every conceivable image and its corresponding conventionalized expression, we have only to compare a pair of translation-equivalent sentences in two contrasting languages and observe that they are only roughly equivalent in meaning and not exactly identical. My favorite example involves the following pair of English and Mandarin sentences:

(1a) *She married the wrong person.*

- (1b) *ta1 jia4 cuo4 le0 ren2.*
 she marry wrong PF aspect person
 ‘She married the wrong person’.

While (1a) and (1b) both express the thought that “the person she married is other than the person she should have married”, they seem to have different emphases: (1a) seems to impute the mistake to someone she married, but (1b) seems to impute the mistake to herself. To see that this is likely the case, we merely have to give (1a) and its literal translation in Mandarin (2(a)) and (1b) its literal translation in English ((2b)) and observe that the results are twisted meanings though acceptable forms:²

- (2a) *ta1 jia4 le0 cuo4 de0 ren2.*
 she marry PF aspect wrong Adj marker person
 (2b) *She married the person by mistake.*

Even more convincing than translation-equivalent sentences of the selective nature of the conventionalization of meaning configurations are innocent-looking simple expressions in one language that, when literally translated into another language, sound totally bizarre, as for example (3a) and (3b):

- (3a) *He is by himself.*
 (3b) *ta1 zai4 zi4ji3 pang2bian1.*
 he at self side
 ‘He is at the side of himself.’
 (3c) *ta1 zi4ji3 yi2ge0 ren2.*
 he self one person
 ‘He is by himself.’

English has conventionalized a pattern of images in which a person can split into two imaginary copies, with one copy acting or relating to the other. But Mandarin has not adopted this pattern, and the translation-equivalent sentence for (3a) is rather (3c), which literally means ‘He is himself one person’.³ To be sure,

2. Although *jia4 cuo4* in (1b) is a resultative verb compound and *cuo4* there is strictly speaking not a manner adverb, unlike when it appears in a phrase as *cuo4 jia4* (where it is), nevertheless (2b) seems the closest literal correspondence to (1b), and it imputes the responsibility of the mistake to *she*. A reviewer’s keen remark has prompted this clarification.
 3. A reviewer has sagaciously pointed out that *by* in *by himself* in (3a) ‘is not exactly a locative preposition’. Someday, English may catch up with this syntactic compression and create a compound like *by-himself* or even a single word like *byhimself*, and the latter would be essentially equivalent to *alone*. There could well have been a time when *by*

in current Mandarin, corresponding to (4a), one can say (4b), but this is obviously due to English influence, and in classical Chinese such forms as those corresponding to (4b) are rare:

- (4a) *I told myself that . . .*
 (4b) *Wo3 gao4su4 wo3zi4ji3 . . .*
 I told myself
 'I told myself that . . .'

Supposedly, this linguistic contrast is due to a cultural difference. When a pair of translation-equivalent sentences are based on different versions of folk physics, the contrast in their meaning is even more vivid, as in:

- (5a) *The sun rose.*
 (5b) *tai4yang2 chu1 lai2 le0.*
 sun out come PF aspect
 'The sun rose'.
 (5c) *tai4yang2 qi3 lai2 le0.*
 sun rise come PF aspect
 lit: The sun rose.

(5a) in English pictures the sun as rising up from below a horizon, but (5b) in Mandarin pictures the sun as coming out from a hiding place. A literal translation of (5a) would result in a bizarre Mandarin sentence (5c): the Mandarin sun does not rise; it just comes out.

The foregoing contrasting pairs, which can be easily multiplied, seem to show that in a natural language only those meaning configurations that are coded by grammatical and idiomatic expressions are conventionalized ones. Whether the conventionalization of meaning configurations takes place before or after their matching expressions become grammatical (and idiomatic) may be a chicken-and-egg question. But for the sake of argument, let us assume that first a meaning configuration is sanctioned and then an expression is created to keep it active and alive in a language. Accordingly, we assume that two versions of folk physics gave rise to two conceptualizations of the sun becoming visible to two different observers in two separate languages (in this case English and Mandarin), and that their two corresponding expressions, (5a) and (5b), were coined.

himself really means *by himself and not by anyone else*, hence *all alone*. With the reader's indulgence, (3b) tries to dramatically revive that stage in the history of English.

Obviously, the set of customary meaning patterns and the set of their grammatical shapes each has its own peculiar structure involving both universal principles and regional rules. The contribution of Chomsky (1986) and his followers, whose representative members in Chinese linguistics include Tang (1991), Huang (1982a), Audrey Yen-hui Li (1990), Yafei Li (1990), Cole, Hermon, and Sung (1990), Mei (1991), Tsai (1994), C. Tang (1989) and others, lies in their persistent search for a universal grammar that will reasonably describe the formal, expressive realm of a language. To some extent, Chomsky's belief in an autonomous syntax is justified, since as a distinct component from the meaning component, syntax may be governed by a set of principles and rules entirely or at least largely different from those governing semantics. But the dissenting generative semantics has not entirely failed as an enterprise; it has eventually led to a much needed additional branch of linguistics concentrating on the study of meaning configurations and their underlying principles.

Among those who continue the frustrated pursuit of meaning by generative semanticists and are often called cognitive grammarians, Talmy (1988, 1991), Langacker (1987, 1995), Lakoff (1987), and Jackendoff (1990) have achieved quite impressive results. Jackendoff's devotion to cognitive grammar sometimes seems half-hearted, since his continuous espousal of autonomous syntax seems to have lured him to look at meaning configurations from the limited-sight window provided by their syntactic expressions. Lakoff has shown that metaphors are a way of using dramatic images to represent prosaic ideas, but he does not seem to have taken a step further to show how metaphoric images are structured according to universal principles. Talmy and Langacker seem to have emerged as two championing grand masters of the cognitive grammarian movement. They are both interested in showing how formal syntactic constraints can sometimes have quite plausible cognitive motivations, such as those discussed in Talmy (1991) and Langacker (1995). A few cognitive grammarian studies in the field of Chinese linguistics, such as those reported in Tai (1985, 1989), Hsieh (1989), Tsao (1990), and Liu (1994), are conducted in this interest. However, what is especially remarkable about Talmy and Langacker is that, going beyond this cognitive-motivation phase, they have gone their separate ways to propose cognitive concepts and principles, either in a unifying grand scheme as in Langacker (1987) or as foundation-laying, connective insights as in Talmy (1988). Their endeavors are of great significance for the progress of linguistics. Until Talmy and Langacker's pioneering works and their likes are published, there is no hard evidence showing that, contrary to Chomsky's belief, there is a meaning component that is not dependent on the formal component for subservient

description, but rather has its own structural principles and rules. Many cognitive grammarians still misinterpret the significance of such research results as achieved by Langacker and Talmy. They mistakenly think that these results have proven that Chomsky's autonomous syntax is wrongly conceived. In reality, Talmy and Langacker and others have instead shown that there is an autonomous semantics, quite regardless of whether there is also an autonomous syntax. Chomsky's idea of an autonomous syntax cannot be falsified merely by the fact that some abstract syntactic patterns have plausible cognitive explanations. Some abstract syntactic phenomena such as the WH-movement studied by Huang (1982b) seem to have no cognitive motivation whatsoever. Even if one can show that every principle or rule postulated in a formal syntactic theory such as GB has a cognitive explanation, one still has not shown that autonomous syntax is false. One would have merely shown that autonomous syntax has a matching isomorphic autonomous semantics. This fancied isomorphism seems hard to demonstrate. It would be more plausible to view syntax and semantics as two separate structures, partially connected by a set of rules which maps images to their expressions. These rules are probably of a foggy and schematic kind, since what images and their matching expressions become sanctioned depends on historical accidents rather than on systematic planning.

3. The Interplay of Form and Meaning

As two independently structured components, the set of meaning patterns and the set of their matching expressions are engaged in an intricate network of interplay. One interesting way images and their representations can interplay involves a certain kind of morpho-syntactic 'dislocation' or 'transportation', by means of which a representational element is moved out of a local construction to end up unexpectedly in another local construction. In such cases, we assume that there is a 'mismatch' between the image and its representation, because in spite of the dislocation or transportation the meaning yielded by the representation is one in which no dislocation affects the matching meaning element. Such dislocations are quite common in literary writings. For example, consider (6a) and (6b):

- (6a) *No friendship worth the name was ever destroyed in an hour without some painful flesh being torn.*
- (6b) *No friendship worth the name was ever destroyed in an hour without some flesh being painfully torn.*

(6a) is the original sentence appearing in F. Scott Fitzgerald's *Tender Is the Night*, and (6b) is its tamer paraphrase. Realistically speaking, flesh cannot be painful as in (6b). (6a) has achieved certain dramatic/poetic effect by means of the transportation of *painfully* from *painfully torn* into *some flesh*, resulting in *some painful flesh*. One need not search hard in literary writings to find this type of dislocations. Even in daily usage, one can find such dislocations, as in (7a) and (7b):

(7a) *I received an unexpected call this morning.*

(7b) *I received a call unexpectedly this morning.*

(7a) is the result of transporting *unexpectedly* in the verbal phrase in (7b) to land inside the nominal phrase *a call* in (7a), resulting in *an unexpected call*. Syntactic dislocation is more general than just transforming an adverb into an adjective, as in (6a) and (7a). One can also transport an adjective modifying a person to an expression for something this person possesses or does, as in (8a) and (8b):

(8a) *The speaker gave an invited paper.*

(8b) *The invited speaker gave a paper.*

(8a) is the result of transporting *invited* in *invited speaker* in (8b) into *a paper*, resulting in *an invited paper* in (8a). Other modes of dislocation are possible. Obviously there are constraints on such dislocations, although their nature and details are not well-known. Thus, for example, (9b) does not seem to have a dislocation version in (9a):

(9a) ?*At one point, he is in brief tears.*

(9b) *At one point, he is briefly in tears.*

Dislocation of this sort is also observed in Mandarin, where, unlike in English, adjectives may become adverbs through dislocation, as Lu (1995) has observed:

(10a) *ta1 re4re4de0 he1 le0 yi4wan3 cha2.*
 he hotly drink PF aspect one bowl tea
 'He drank a bowl of tea while it is piping hot.'

(10b) *ta1 he1 le0 yi4wan3 re4re4de0 cha2.*
 he drink PF aspect one bowl hot tea
 'He drank a hot bowl of tea.'

(10a) results from (10b): the adjective *re4re4de0* in (10b) transforms into the adverb *re4re4de0* in (10a) through dislocation. For those speakers more dis-

criminating of expressive nuances, (10a) and (10b) are not exactly synonymous, and, in our terms, the transportation of the adjective *re4re4de0* has caused a distortion of the meaning in (10a). In (10b) the adjective *re4re4de0* is predicative of *cha2*, but in (10a) *re4re4de0* is predicative of the drinker's action, the way he drinks the tea, namely, with relish of the heat of the tea in a cold weather. Some other examples cited by Lu also display this kind of distortion due to transportation, as in (11a) and (11b):

- (11a) *ta1 cui4cui4de0 zha2 le0 pan2 hua1sheng1mi3.*
 he crisply fry PF aspect plate peanuts
 'He crisply fried a dish of peanuts.'
- (11b) *ta1 zha2 le0 pan2 cui4cui4de0 hua1sheng1mi3.*
 he fry PF aspect plate crispy peanuts
 'He fried a dish of crispy peanuts.'

In (11b), *cui4cui4de0* expresses the crispness of the peanuts after they are fried, but in (11a) *cui4cui4de0* expresses how the agent, *ta1* 'he', fried the peanuts, namely, making sure that they become crispy, or expresses how the peanuts change in the action of his frying them, namely, turn crispy.⁴

The distortions, if they can be so called, in (10a) and (11a) have a common feature: the descriptive terms for steady-state objects are used to describe the actions involving these objects, that is, *cha2* 'tea' as it is being drunk and *hua1sheng1mi3* 'peanuts' as they are being fried. Lu's important contribution in connection with syntax-semantics mismatch of this type has been to extensively enumerate its varying subtypes. The next step would be to find out the set of general principles governing such distortion through transportation, and one way to achieve this goal is by studying common features such as the one relating (10a) and (11a).

The patterns of form-meaning mismatch we have so far examined all share this trait: an element in a local construction is transported into another local construction to become its somewhat uneasy alien element. It is this alien nature of a transported element that gives a mismatch pattern its poetic or dramatic force. Both the 'exporting' locality and the 'importing' locality in these

4. The status of the phrase *cui4cui4de0* is ambiguous. It has the form of a manner adverb (such as *man4man4de0*) 'slowly' modifying the agent *ta1* 'he', but its purpose seems to express rather the state of the peanuts after they are fried. A reviewer's perceptive remark has prompted this clarification.

patterns happen to be constructions on the same level of linguistic representation, that is, they are both syntactic forms with matching semantic patterns. But the exporting locality and the importing locality do not have to occur on the same level of formal expression. The exporting locality can be a syntactic construction, and the importing locality can be a morphological construction, which is one level lower in the compositional structure of a sentence. Inter-level or inter-component transportations contrast with intra-level or intra-component transportations. In an intra-level transportation, the imported alien element, though uneasy, has an interpretation within the imported construction, such as *re4re4de0* in (10a), but in an inter-level transportation, the imported alien element often has no interpretation within the importing construction but has an interpretation only in the exporting construction. Moreover, the exporting construction on which depends the interpretation of its exported element, may originally contain the exported element as its only overt element. In that case, the exportation results in the invisibility or disappearance of the entire exporting construction, and only an imaginative and ingenious linguist can uncover such a vanished exporting site.

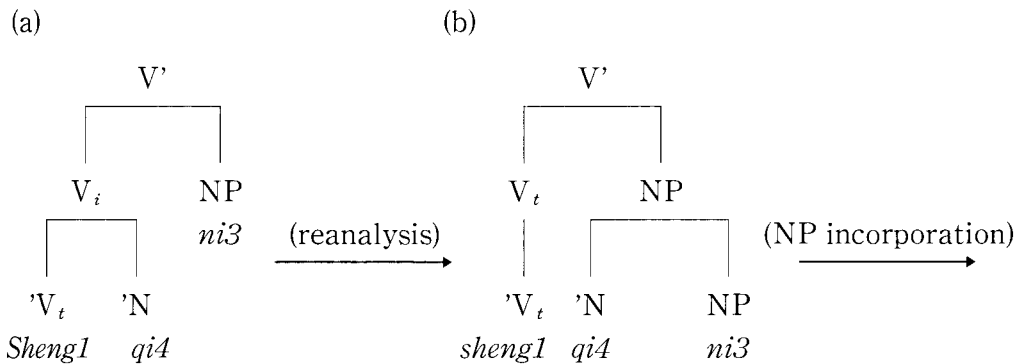
Ting-chi Tang (1991) is one such imaginative and ingenious linguist. Building on available research results, Tang has painstakingly identified and analyzed several types of inter-level and intra-level transportations. Since each transportation involves moving an element from an exporting locality to an importing locality to morpho-syntactically adjoin it to, or phonologically merge it with, an existent element in the importing site, Tang called it 'incorporation', appropriating a term made well-known especially by Baker (1988). Using the framework of GB, Tang analyzed at least seven types of incorporation: (i) noun incorporation, (ii) nominal-phrase (NP) incorporation, (iii) quantifier-phrase (QP) incorporation, (iv) preposition incorporation, (v) verb incorporation, (vi) adjective incorporation, and (vii) adverb incorporation. Tang's analyses are thorough and well-reasoned, and a more comprehensive study of incorporations in Mandarin seems unlikely to appear anytime soon. Two of the types Tang studied are especially interesting in that they involve the transportation of a syntactic element into a morphological construction, specifically, a verbal compound, and these two types are (ii) NP incorporation and (iii) QP incorporation. The NP incorporation is illustrated by (12a) and (12b):

- (12a) *ta1 [sheng1 ni3de0 qi4] =imp. [Φ]=exp.*
 he produce your anger
 'He is angry at you'.

- (12b) *ta1* [*sheng1 qi4*] =*imp.* [*ni3*]=*exp.*
 he produce anger you
 'He is angry at you'.

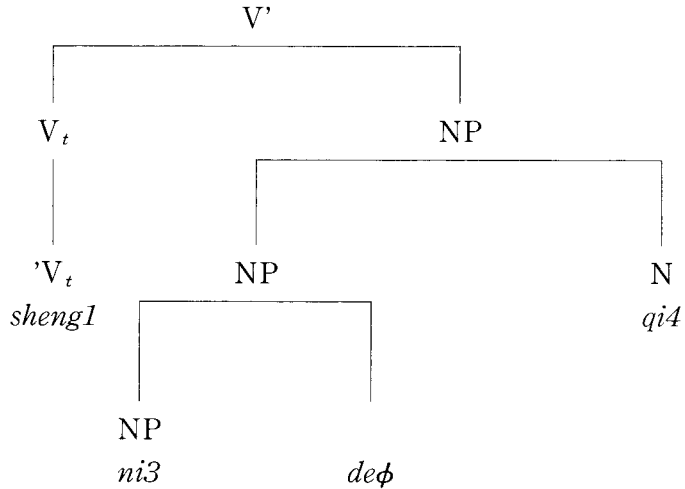
In terms of exportation and importation, [*sheng1 qi4*] in (12b) is the importation construction and [*ni3*] is the exportation construction, whose sole element is simply *ni3*. After *ni3* is imported into [*sheng1 qi4*], it is modified into *ni3de*, thus assuming the misleading form of a possessive phrase modifying *qi4* in (12a). But *ni3de0* does not have an interpretation in the importation construction [*sheng1 ni3de0 qi4*] in (12a). If grammatical, (12b) would mean 'He gets angry at you', not 'He causes your anger', which is what (12a) would mean if the imported element *ni3de0* had an interpretation within the importation construction [*sheng1 ni3de0 qi4*]. (12a) and (12b) together serve to illustrate the kind of inter-level transportation, in which a transported element has an interpretation only within its original exporting location. Tang is perhaps quite aware of this kind of exporting-site interpretation, but his focus in analyzing (12a) is to find a formal explanation for the change of the NP *ni3* into *ni3de0*, after it gets incorporated into the verbal compound *sheng1qi4*. To explain, Tang (1991:7) postulated a process of incorporation, which is recaptured as (13) (=Tang (5)):

(13)



According to Tang, 13(a) transforms into 13(b) by reanalysis and further into 13(c) by NP-incorporation. As Tang explained, the 'N(*qi4*) in 13(b), being a noun, can only have an 'inherent case' and cannot assign a 'structural case' to the NP(*ni3*) to its right, obeying Chomsky's (1986:193ff) constraint. Therefore, Tang said, the NP(*ni3*) must move into the specifier position (occupied by the lower sister NP to N) in the NP (*ni3de qi4*), in order to acquire its possessive case. Tang's analysis seems reasonable and it provides a formal explanation for why the grammatical expression for the meaning intended in (12b) is (12a)

(c)



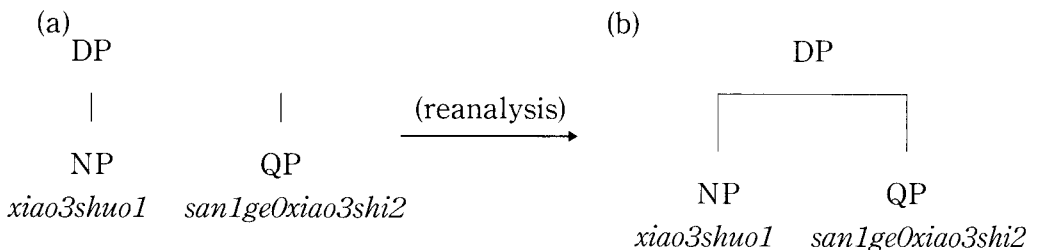
rather than (12c): (12c) *ta1 sheng1 ni3 qi4*. In unguarded speech, (12b) and (12c) may be uttered, but in guarded speech (12a) is the normal form. Tang's analysis provides an explanation for the normal form (12a). Tang's account for the QP incorporation proceeds in a similar manner. Consider (14a) and (14b):

(14a) *ta1 du2 le0* [*san1ge0 xiao3shi2 de0 xiao3shuo1*]=*imp.*
 he read PF aspect three hour Adj marker novel
 [ϕ]=*exp.*

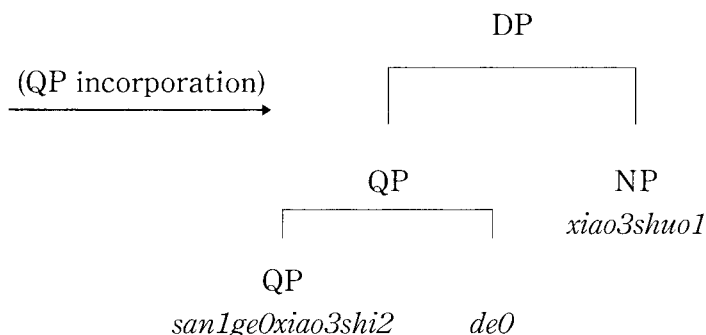
(14b) *ta1 du2 le0* [*xiao3shuo1*]=*imp.* [*san1ge0 xiao3shi2*]=*exp.*
 he read PF aspect novel three hour

In term of exportation and importation, *san1ge0 xiao3shi2* in (14b) moves from an exportation locality formed by itself into the importation locality formed by *xiao3shuo1*, and the result is (14a). Tang postulated an incorporation process which we recapture in (15) (=Tang(6)):

(15)



(c)



Again a mechanism of reanalysis is invoked in deriving (15b) from (15a); and a procedure of QP incorporation is effected to derive (15c) from (15b). Tang's explanation for the need of incorporation again depends on case theory in GB. According to Tang, the N(*xiao3shuo1*) in (15b), being a noun, can have only an inherent case and cannot assign a structural case to the QP (*san1ge0xiao3shi2*) to its right, therefore the QP must move into the specifier position of the DP, resulting in the structure of (15c). Assuming that the case-theoretic arguments for the NP-incorporation in (13c) and the QP-incorporation in (15c) are justified, they provide an explanation within the framework of GB for the need of incorporation: the 'N(*qi4*) in (13b) and the NP(*xiao3shuo1*) in (15b) are unable to assign a structural case, and so the incorporation resulting in a fake possessive phrase is used as a remedy to obtain a grammatical sentence.

But do Tang's rules in (13) and (15) have any psychological reality? Unlike some syntactic or semantic theoreticians, Tang has no contempt either for those linguists, for whom psychological reality is the only lofty-minded test of a grammatical theory, or for those linguists, for whom computer application of a grammatical theory is its sole practical justification. In fact, Tang concluded his long article by observing that, if one postulates as he does an essentially identical set of structural rules for syntax and morphology, one can make one's theory more consistent with the reality manifested in children's language acquisition: children apparently do not need to learn two different sets of rules for syntax and morphology.

Psychological reality of linguistic rules can be observed or demonstrated in various ways. The most direct demonstration is of course through the kind of psycholinguistic experiments such as conducted by Wang (1993, 1995), Hsu (1992), Tsay (1995) and others. Both the acquisition of language by children and by second-language learners and the interaction between speakers of different dia-

lects can also provide convincing supporting evidence for the rules of a grammar. Purported psycholinguistic evidence does not have an absolutely conclusive status, because even psycholinguistic experiments must depend on our beliefs in current theories of psychology, language, and statistics, which in themselves are not absolute and final truths. Truth is not a fixed reality, but an evolving belief, as the history of scientific progress has clearly shown. Nevertheless, at every stage in the development of a scientific discipline, such as linguistics, there is truth and particularly psychological reality.

The most direct way to verify Tang's NP- and QP-incorporation is of course by conducting a psycholinguistic experiment. While waiting for such a direct demonstration, we may nevertheless try to find confirmation in a less directly revealing domain, namely, in the interaction between speakers of two different dialects. In Taiwan, there are two major varieties of Mandarin: the kind of Mandarin whose speakers also speak Taiwanese as a first language (let's call it Taiwanese-flavored Mandarin, or TM) and the kind of Mandarin whose speakers are descendants of Mainland settlers in Taiwan (let's call it Mainland Mandarin, or MM).

As Cheng (1985) has extensively documented, these two major varieties are actually not opposed as two irreconcilable dialects, but often blend into a compromised speech form (let's call it Nativized Mandarin, or NM), through mechanisms of grammatical interaction, whose underlying principles have recently been explored by Hsieh (1991, 1992), Cheng (1991a, b, c), Chang (1991a, b), Her (1991, 1994, 1995), M-L. Hsieh (1992), Zhu (1991, 1992), Gai (1991), and others. Some of these scholars were inspired by Wang's (1969) insightful idea of rule competition, and they refined it into the idea of grammatical interaction.

There are three types of rule interaction in grammar. Briefly, two rules are in 'complementation' if they apply to two different inputs to produce two distinct outputs, are in 'conflict' if they apply to an identical input to yield two different outputs, and are in 'conspiracy' if they apply to an identical input to create a uniform output. One consequence of dividing competition into complementation, conflict, and conspiracy is that lexical diffusion (Wang 1969, Chen and Wang 1975, Wang and Lien 1993) is now seen to proceed by means of three mechanisms, corresponding to the three interactional types. If Huang's (1990) idea of modules is further added to lexical diffusion and interaction, a dynamic picture of language emerges: rules originating from different modules (such as syntax and morphology) can proceed in the manner of lexical diffusion, through the mechanisms of complementation, conflict, and conspiracy. In two interesting articles, Her (1994, 1995) has tried to give convincing examples of such a

dynamic picture of language. One way to further articulate this dynamic view is to assume that interaction resulting in complementation, conflict, or conspiracy can affect both rules within a single component and rules across two separate components, with the result that lexical, morphological, and syntactic diffusion can simultaneously involve both intra-componential and inter-componential interaction. A convincing example of such a large-scale interaction may not be easy to find. However, once we have come up with just such an example, we would have gone some way toward making precise Jespersen's (1965) great insight that a language is constantly in a 'flux'.

Returning to our question about the psychological reality of Tang's NP- and QP-incorporation, we notice that on sentences involving NP-incorporation, TM and MM speakers may pass different acceptability judgments, based on their own sub-dialects, and that one can interpret such a difference as a confirmation of Tang's NP-incorporation. Consider the NM sentence in (16a), (16b), and (16c):

- (16a) *ta1 sheng1qi4 pian4 ta1de0 qian2 de0 ren2.*
 he angry cheat his money Adj marker person
 'He is angry at the one who cheated him of his money.'
- (16b) *ta1 sheng1 pian4 ta1de0 qian2 de0 ren2 de0*
 he produce cheat his money Adj marker person Adj marker
qi4.
 anger
- (16c) *ta1 qi4 pian4 ta1de0 qian2 de0 ren2.*
 he angry cheat his money Adj marker person

Sentences (16a), (16b) and (16c) are essentially synonymous, but are not equally acceptable. (16c) is perfectly acceptable to both TM and MM speakers and this is easy to explain, because *qi4* 'be angry at' is a non-compound transitive verb taking an NP as its object. But (16a) and (16b) involve the verbal compound *sheng1 qi4* 'be angry at' and their acceptability varies for TM and MM speakers. While a TM speaker tends to accept (16a), an MM speaker tends to reject it. As for (16b), the TM speaker and the MM speaker both find it barely acceptable. Now consider (17a) and (17b):

- (17a) *ta1 sheng1 qi4 ni3.*
 he produce anger you

- (17b) *ta1 sheng1 ni3de0 qi4.*
 he produce your anger
 'He is angry at you.'

An MM speaker tends to reject (17a), but a TM speaker may consider it all right. However, both the MM and the TM speaker accept (17b). One reasonable way to explain this difference between the TM speaker and the MM speaker is to assume that there really is an NP-incorporation as Tang postulated. Because Taiwanese requires no NP-incorporation, (17a) has a literal translation into a grammatical sentence in Taiwanese, and hence it is quite acceptable to a TM speaker. Because of this lack of NP-incorporation rule in Taiwanese, TM speakers, who find (17a) quite acceptable, also find (16a) equally acceptable. Both the TM and the MM speaker find (16b) awkward, presumably because 'processing' (16b) requires making a distinction between the first as well as the second *de0*, which has a meaning, and the third *de0*, which is empty of meaning. This distinction perhaps complicates the processing and so (16b) is judged awkward by both the TM and the MM speaker, since NM probably contains Tang's NP-incorporation rule. If this explanation in terms of processing complexity is the best explanation we can provide, then Tang's NP-incorporation rule takes on psychological plausibility.

Experimental linguists as well as computational linguists are sometimes disappointed at the amount of speculation and circularity that they find in formal linguistic arguments. However, formal linguistics is still a worthwhile pursuit, especially when the formalistic claims can find psycholinguistic confirmation and computational application. For to a considerable extent, experimental and computational linguistics depend on formal linguistics for their topics of study. A balanced view on the competing claims to importance by the formal, experimental, and computational linguists would be to regard all three major branches as three mutually feeding and invigorating domains. The history of modern linguistics since Chomsky's revolution seems to support this view. From this perspective, Professor Tang's life-time work in formal syntax is indeed of great significance, since his numerous interesting formal claims can provide both experimental and computational linguistics in Chinese with provocative ideas for psycholinguistic tests and computer applications.

4. Conclusion

Meanings and their representative forms are likely governed by two distinct

sets of rules, which are based on universal principles or meet regional demands. Meaning configurations and formal expressions can be studied as two separate and distinct structures, and can also be examined as two interrelated systems. In linguistics, formal syntax and cognitive semantics can be explored as two independent domains, and can also be investigated as two interconnecting realms. Formal, theoretic studies of language provides experimental linguistics and computational linguistics with postulations that need to be verified experimentally or made practically useful on a computer. On that ground, formal syntax, to which professor Tang has devoted many fruitful years in his life to study, is of great importance to the understanding of language.

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形式與意義：其間的分別，交集與互動

謝信一

夏威夷大學

摘 要

本文旨在探討形式與意義的微妙互動關係，特別是在形式表現為句子而意義作為句子的語意的情況下。全文要點有三：(一)語意比句法更廣泛，因此句法無法全部表達語意；(二)形式語法學與認知語法學可以互補不足，因為前者注重形式，而後者注重意義；(三)句法與語意在句子中造成不相稱，例如湯廷池（1991）所研究的名詞組與量詞組介入其他句法單位的現象。

關鍵詞：形式，意義，互動，湯廷池