CROSS-FIELD GENERALIZATION: CONCEPTUAL STRUCTURES FOR STRIKE AND IMPRESS*

SEIJI IWATA
University of Tsukuba

In this article we analyze two psychological predicates, strike and impress, and posit their conceptual structures based on the theory of Conceptual Semantics advocated in Jackendoff 1983, 1987. We will first examine three types of strike in terms of three semantic criteria (verb type, semantic field, and EVENT/STATE) on the assumption that psychological strike is fundamentally the same as spatial strike. We will extend our analysis to impress, which has two types. All these types require their own distinct conceptual structures. Finally, we will show the necessity of these distinctions by critically examining the raising analysis of Chomsky 1981.

1. CONCEPTUAL STRUCTURE. The most fundamental assumption of Conceptual Semantics, which is advocated by Jackendoff 1983, 1987a, b, c, is that meanings are mentally represented. According to this theory, the organization of languages includes three autonomous levels of structure: phonological, syntactic, and semantic/conceptual. It follows then that conceptual structure is essentially the form in which thought is couched.

Jackendoff 1987a claims that there are four fundamental distinctions in conceptual structure. They are (a) distinction in verb type, (b) distinction in semantic field or field modifier type, (c) EVENT/STATE distinction, and (d) TYPE/TOKEN distinction.

Let us briefly overview these distinctions. It is quite often observed that the verbs of non-spatial meaning appear in patterns parallel to those of spatial verbs. For instance, consider the following data.

(1) a. The dog ran from the door to the table.
   b. Max was in Africa.

* This is a revised version of part of my M.A. thesis submitted to the University of Tsukuba in December 1987. I am grateful to Minoru Nakau, Yukio Hirose, Nobuhiro Kaga, Jun Abe and two anonymous reviewers for their comments and suggestions. My special thanks go to James Ford, who acted as a kind and patient informant.
c. Stanley remained in Africa.

(2) 

a. Harry gave the book to Betty.
b. The book belonged to the library.
c. The iguana stayed in Max's possession.

(3) 

a. The coach changed from a handsome young man into a pumpkin.
b. The coach was a turkey.
c. The poor coach remained a pumpkin.

What is described in each sentence can be regarded as the motion of an object in (a), the location of an object in (b), and the maintenance of the location over a period of time in (c). Within Conceptual Semantics, these parallels are represented by assuming that the verbs in (a), (b), and (c) are all instances of the general concepts [GO (X, P)], [BE (X, L)], and [STAY (X, L)], respectively. (i.e. distinctions in verb type)

Of course, these functions alone are not sufficient. The basic notion of what it is to be 'in a place' differs from 1-3. It is 'to be in a spatial position' in 1, 'to be owned by someone' in 2, and 'to have a property or be in a category' in 3. These differences are expressed by the type of field modifier attached to each function. It is Spatial for physical motion and location, Possessional for possession, and Identificational for identification. (i.e. distinctions in field modifier type)

The EVENT/STATE distinction has to do with temporal structure. In fact, Jackendoff 1983 proposes three tests for this distinction: (i) EVENTS, but not STATES, occur in the construction what happened was that ..., (ii) with STATES, the (durational) simple present tense can express present time; and (iii) with EVENTS, present time is expressed not by simple present but by present progressive aspect. Of these three, however, the 'what happened' test is rather loose. Progressive aspect is sometimes barred by another factor (for instance, punctuality of the verb).1 So we will use the simple present as the reliable test throughout this paper.

Finally, the representation of the thing being categorized is referred to as a [TOKEN] concept and that of the category as a [TYPE] concept. This distinction will not be relevant in the following discussion, however.

Conceptual structure is thus capable of handling the phenomenon as

---

1 For instance, observe the following contrast: *I am finding the key/ I am finding the keys. I am indebted to Nobuhiro Kaga and Prof. Nakau for this insight.
seen in 1-3, which might be called cross-field generalization. But its remarkable advantage is that it provides a way of unifying various uses of the same morphological verb. For instance, *turn into* has the following two uses.

(4) a. The coach turned into a driveway.
   b. The coach turned into a pumpkin.

4a describes a physical motion, and 4b a change of one’s status. Hence *turn into* is a GO-verb. And the semantic field is Spatial in 4a, Identificational in 4b. In both cases, the whole structure corresponds to an EVENT. A *pumpkin* in 4b represents a category and is assigned the TYPE. But except for this NP every constituent in 4 expresses one particular instance and hence is assigned the feature TOKEN. We thus get the following conceptual structures.

(5) a. The coach turned into a driveway. (Spatial)

\[
\text{TOKEN} \left[ \text{GO}_{\text{Spat}} \left[ \text{Object} \text{COACH}, \text{Path TO} (\text{Object} \text{DRIVEWAY}) \right] \right]
\]

b. The coach turned into a pumpkin. (Identificational)

\[
\text{TOKEN} \left[ \text{GO}_{\text{Ident}} \left[ \text{Object} \text{COACH}, \text{Path TO} (\text{Object} \text{PUMPKIN}) \right] \right]
\]

The correspondences between syntactic and conceptual positions are the same in both cases, indicating that the verb is fundamentally the same. Conceptual structure thus enables us to capture the lexical generality.

In the next section, we will posit conceptual structures for *strike* based on the three distinctions (field, EVENT/STATE, and verb type), with the hope of achieving the lexical generality in this case as well.

2. **Strike**. *Strike* has the following three uses having to do with psychological meaning.

(6) a. He strikes me as being honest. (A)
   b. The idea strikes me. (B) (= The idea is striking to me.)
   c. An idea struck me. (C) (= An idea occurred to me.)

For convenience’ sake, we will henceforth refer to these types as (A), (B), and (C). Let us see in turn how the three distinctions are to be specified in each conceptual structure.
2.1. **FIELD.** We begin with field modifiers. (A)–(C) all involve one’s mental process. But (B) differs from the other two in describing an emotive process, whereas (A) and (C) are noncommittal about one’s emotive aspect.² This difference manifests itself in that only (B) has an adjectival version followed by a *to-PP*, just like a typical emotional reaction predicate *surprise*.

(7) a. The idea is striking to me.
   b. The news is surprising to me.

We will refer to this field distinction between (A) and (C), on the one hand, and (B), on the other, as Cognitive/Emotive.

2.2. **EVENT/STATE.** Both (A) and (B) correspond to a STATE, so that they can be in the simple present.

(8) Mary strikes Pete as being unfriendly.
(9) The idea strikes me.

But this is not the case with (C). It does appear in the simple present tense, but this refers to the instantaneous present, not durational present.

(10) A thought strikes me (= at this time). (LDCE: 1104)

2.3. **STRUCTURE.** It is generally agreed that a verb extends its meaning from concrete to abstract domains, not the converse. In the process of this mapping, the core meaning of a verb remains constant. This constant is the structural relation within conceptual structure, which we will henceforth call semantic structure.

In examining a verb with multiple senses, it should be easier to determine its verb type in terms of its original, spatial sense than in terms of its derivative, abstract sense. This is also the case with *strike*, if there is really a spatial counterpart. We contend that *strike* as a verb of physical impact is to be related to psychological *strike*. This is another way of saying that the two *strike’s in 11 are of the same verb, only their semantic fields being different.

(11) a. He struck me with a hammer.
   b. He strikes me as odd.

Although this possibility has not been explored in the literature (includ-

² There are two possibilities concerning how to handle this distinction. One is to take this distinction to be that of field. Another possibility is that this is a subfield distinction within the psychological field. This second possibility might be better for *strike* and *impress*, but we will adopt the first in this paper.
ing Jackendoff), there is good reason to believe that the two *strike*’s are not mere homonyms. Close investigation into other languages suggests that it is not rare for a verb of physical impact to also have a psychological use.

French  *frapper*

(12)  a. John me frappe par sa suffisance.
   ‘John strikes me as pompous.’

   b. Il m’a frappé.
   ‘He struck me.’  
   (Ruwet 1972: 224)

Italian  *colpire*

(13)  a. Gianni mi ha colpito con un bastone.
   ‘Gianni struck me with a stick.’

   b. Gianni mi ha colpito per la sua prontezza.
   ‘Gianni struck me for his quickness.’
   (Belletti and Rizzi 1986: 9)

Japanese  *utsu*

(14)  a. John-wa Mary wo utta.
   John nom. Mary acc. struck
   ‘John struck Mary.’

   b. John-no-kotoba-wa Mary no kokoro wo utta.
   John gen. word nom. Mary gen. mind acc. struck
   ‘John’s word struck Mary’s mind.’
   = John’s word was striking to Mary.

In order to handle these facts in a systematic fashion, it is reasonable to relate the spatial and psychological uses by regarding the latter as a metaphorical extension of the former. In pursuing this possibility, let us begin with the pair (B) and (C).

(15)  a. The idea strikes me.  (B) (= The idea is striking to me.)
   b. An idea struck me.  (C) (= An idea occurred to me.)

The spatial counterparts for these seem to be the following.

(16)  a. He struck the fence.  (X)
   b. A bullet struck the fence.  (Y)

Again, for convenience’ sake, let us refer to the two *strike*’s in 16 as (X) and (Y), respectively. If (X) and (Y) are parallel to (B) and (C), then we can get the semantic structures for (B) and (C) by examining (X) and (Y).

At this point one thing is to be noted in positing conceptual structures for these *strike*’s. That is, the two conceptual structures must be such that they are related to each other in some straightforward way. In view of the native speakers’ intuition, as well as the ease with which children
learn \((X)\) and \((Y)\), it is necessary to unify the multiple uses of *strike* somewhere in the grammar in order to guarantee that \((X)\) and \((Y)\) are both ‘strike’s. In this light, we propose that \((X)\) and \((Y)\) constitute a causative-ergative pair. This is not unreasonable in view of the fact that two uses of one and the same verb with the same morphology quite often constitute a causative-ergative pair among English verbs (e.g. *hit*, *gallop*, etc. See Hale and Keyser 1986).

This analysis works well especially when we look at the two lexical entries. Consider \((Y)\) first. 16b essentially means that a bullet came flying to the fence suddenly and forcefully. So this is a GO-verb. Interestingly enough, the qualification ‘suddenly and forcefully’ is crucial. The subject must denote something that swiftly comes of its own force.\(^3\) A bullet is well fitted. Even the object that is not so readily connected with this sense has to be so construed. Thus, in 17 the stick must have flown forcefully to the fence for the sentence to be semantically well-formed.

\((17)\) A stick struck the fence.

This restriction on the subject NP must be written in the lexical entry. We represent this by the semantic marker IMPACT. As a consequence, the lexical entry for *strike* \((Y)\) looks like 18 (irrelevant details omitted).

\[(18)\]

\[
\begin{array}{l}
\text{strike (Y)} \\
[-N, +V] \\
-\text{NP}_j \\
[\text{Event GO ([Thing IMPACT], [Path TO ([Thing ])])}] \\
\end{array}
\]

The notations here essentially follow the conventions proposed in Jackendoff 1987b, c. Roman alphabet subscripts stipulate correspondence between syntactic and conceptual positions. Each conceptual constituent contains an appropriate semantic marker. So if a constituent is indexed, then only arguments that are compatible with this marker are fused into this position (Argument Fusion) in syntactic-conceptual mapping. If the reading of the syntactic constituent is incompatible, ill-formedness results (This is just the effect of ‘selectional restrictions’ in traditional terms. For details, see Jackendoff 1987b, c). Now turning back to 18, the first argument of the GO-function has an index \(i\), which ensures the correspondence with the syntactic position subject. So the subject NP must denote something which matches the feature Thing and

---

\(^3\) This is what Grunau 1985 calls impinging theme in his analysis of *hit*. 
the marker IMPACT, which explains the possible interpretations of 16b and 17.

Let us go on to strike (X). Its lexical entry is represented as follows:

\[
\begin{align*}
(19) \quad \text{strike (X)} \\
[-N, +V] \\
\text{NP}_j \\
[\text{Event CAUSE ([Thing]_i), [Event GO ([Thing IMPACT], [Path TO ([Thing j)]])]}]
\end{align*}
\]

The outermost function is a CAUSE which takes as its second argument the part corresponding to strike (Y). This instantiates our claim that strike (X) is the causative of strike (Y). It is to be noticed that the shared GO-function has not only the semantic structure but also the semantic marker intact for both strike's. Consequently, the marker IMPACT is present in the first argument slot of GO. However, since the subject position corresponds to the first argument of CAUSE this time, the index \(i\) is assigned there. So the conceptual position with IMPACT no longer corresponds to a syntactic position and Argument Fusion does not apply. As a result, IMPACT becomes an incorporated argument. Thus strike (X) means 'give an impact'.

There is evidence for the adequacy of our analysis. When an instrumental with-phrase is added to strike (X), it must denote something which is held and manipulated by the subject throughout the action. A flying object such as a ball, which matches the marker IMPACT, is disallowed.

\[
(20) \quad \begin{align*}
a. & \quad \text{He struck the fence with a stick.} \\
b. & \quad *\text{He struck the fence with a ball.}
\end{align*}
\]

From our point of view, this is a natural consequence. A ball in 20b, construed as flying to the fence, represents IMPACT. But IMPACT is already present in the verb's meaning. Hence a semantic clash occurs between these two IMPACTs.

Furthermore, syntactic phenomena argue in our favour. Consider first the typical 'incorporation' case. The verb paint incorporates PAINT. Green 1974 observes that 21 as it stands is bad because of redundancy. But when somewhat appropriately modified, the with-phrase can appear without any oddity.

\[
(21) \quad \text{She painted the woodwork with paint.}
\]
\[
(22) \quad \text{She painted the woodwork with \{red paint, paint I sold her.} \\
\quad \text{(Green 1974: 222)}
\]

Because of redundancy the incorporated material cannot appear syn-
tactically. But it may appear in the *with*-phrase when this *with*-phrase succeeds in adding nonredundant information. The *with*-phrase which thus realizes the incorporated material shows the following behavior, which is just that of an adjunct. First, the *with*-phrase appears outside of *do*-so. This is now generally taken to mean that the constituent is outside of the V'-complement.

(23) John painted the wall with black paint, and Mary did so with red paint.

Next, extraction out of this *with*-phrase is impossible. And pied-piping is possible (For syntactic treatments within the GB framework, see Oka 1986).

    b. With red paint, I believe John painted the wall.

Just the same syntactic phenomena are observable in the case of *strike*. Although realization of the incorporated material seems to be more severely constrained in this case than with *paint*, it is possible. A *heavy blow* in 25 seems to be a syntactic realization of IMPACT with nonredundant information.

(25) I struck John with a heavy blow.
    (cf. ?*I struck John with a blow.)

This *with*-phrase appears outside of *do*-so. And extraction out of this phrase is impossible, while pied-piping is O.K.

(26) John struck the fence with a hard blow, and I did so with a soft blow.

(27) a. *A heavy blow, I believe he struck the fence with.
    b. With a heavy blow, I believe he struck the fence.

So the lexical entry 19 that we have posited on the basis of the causative hypothesis gets independent support from semantic and syntactic phenomena. After Argument Fusion applies to these entries, the indices and markers are deleted and the following conceptual structures result.

(28) A bullet struck the fence. (Y)
    \[\text{Event GO ([Thing BULLET], [Path TO ([Thing FENCE])])}\]

(29) He struck the fence. (X)
    \[\text{Event CAUSE ([Thing HE], [Event GO ([Thing IMPACT], [Path TO ([Thing FENCE])])])}\]

The conceptual structures for *strike*’s (X) and (Y) can be directly applied to the psychological counterparts (B) and (C). The structural relations should be constant, so we get the following semantic structures.

(30) An idea struck me (C) (=An idea occurred to me).
(31) The idea strikes me (B)
(=The idea is striking to me).

[CAUSE ([IDEA], [GO ([IMPACT], [TO ([I])])])]

Notice that these conceptual structures, which are based on the parallelism with spatial strike, are intuitively appealing in enabling satisfactory paraphrases. In both 30 and 31, me is conceptualized as a psychological place. To be more specific, ‘me’ is equivalent to ‘my mind’. The semantic marker IMPACT also exists within the first argument slot of GO. In 30, this serves to express the suddenness of my encounter with the idea, hence the meaning ‘An idea suddenly came to my mind’ obtains. On the other hand, the conceptual structure 31 basically means ‘The idea gives a mental impact to my mind’. These paraphrases well capture the basic meanings of strike’s (B) and (C).

Let us now turn to the remaining one, namely strike (A). Again, it is desirable to posit a structure which can be easily assimilated to those of other strike’s. So we argue that strike (A) has the same semantic structure as strike (B), rather than (C), for in that case the number of conceptual positions matches that of syntactic positions. Apparently, strike (A) has three argument positions: subject, direct object and as-phrase. If it also has three slots in conceptual structure as strike (B), then a clear correspondence becomes possible. This is a very desirable consequence.

Syntactic behavior also suggests that this as-phrase is to be regarded as an argument. When an adjunct with-phrase is added, it must necessarily follow the as-phrase and never precedes it. This indicates that the as-phrase is in a lower hierarchy than the with-phrase. Probably it is a V'-complement.

(32) a. He strikes me as honest with his sincere words.
   b. *He strikes me with his sincere words as honest.

Furthermore, extraction out of the as-phrase is possible.

(33) What I strike John as is nutty. (Bach (1979: 523))

(34) What did Tom strike you as?
   He struck me as being honest.

From these, we conclude that the as-phrase is a complement. It follows then that the as-phrase corresponds to the first argument of GO.

(35) Tom strikes me as being honest. (A)
[CAUSE ([TOM],[GO ([i HONEST],[TO ([I])])])]

Since the conceptualization pattern seems to be essentially the same
across strike's (A) and (B), the correspondences of subject and direct object positions should be the same. So the only remaining possibility is to connect the as-phrase with this conceptual position. We thus finally come to the structure 35.4

2.4. Conceptual structures for strike. We now get the following conceptual structures for three strike's by combining the three elements that we have identified (EVENT/STATE, field, and semantic structure).

(36) Tom strikes me as being honest. (A)
     (Cognitive field)
     \[State \text{CAUSE} ([\text{TOM}], [\text{Event GO ([i HONEST], [TO ([II)])]})]\]

(37) The idea strikes me. (B)
     (Emotive field)
     \[State \text{CAUSE} ([\text{IDEA}], [\text{Event GO ([IMPACT], [TO ([II)])]})]\]

(38) An idea struck me. (C)
     (Cognitive field)
     \[\text{Event GO ([IDEA], [TO ([II)])]})\]

Two remarks are in order here. First, the embedded GO-function is assigned the feature EVENT in 36 and 37 in order to express the relevant meaning. In both cases the arrival of the mental object, i.e. Tom's being honest or IMPACT, occurs in a moment and the resultant effect remains. This comes from the fundamental meaning of strike. As can be seen in the incompatibility with progressive aspect, it is basically a punctual verb.

(39) a. *John is striking me as being intelligent.
    b. *The article was striking Mary.

Incidentally, note that the GO-function is assigned an EVENT with all three types. This means that all three types share not only the function but also the feature EVENT. Since we are assuming that (A) and (B) are causatives of (C) just as in the case of spatial strike, this is a welcome result.

Next and more important, the CAUSE-function is assigned a STATE. This is because the outermost function is responsible for the EVENT/STATE distinction of the sentence as a whole, and the sentence corresponds to a STATE in these cases. A state CAUSE-function has

---

4 So it might be possible to suppose that strike (B) is a default value case of strike (A). That is, the first argument of the embedded GO is specified by the marker IMPACT in the unmarked case, but may be filled in by the reading of the as-PP.
been unmentioned in Conceptual Semantics, so we need to introduce a new function into the inventory.

(40) \[[\text{STATE}] \rightarrow [\text{STATE CAUSE Stim} ([X], [Y])]\]

At first, some might feel a little bit uneasy with this state CAUSE-function. Such a feeling might be dissolved if we regard the CAUSE-function as simply representing a causal relation, rather than an actual, dynamic bringing about of an event. The CAUSE-function just means a causal relation, and no more. Only when coupled with the feature EVENT does it express a dynamic causation. As a matter of fact, an abstract causal relation exists where we claim a state CAUSE-function appears. In this connection, Postal 1974 makes intriguing observations.

(41) a. Jim struck me as having outplayed Ted.
    b. Ted struck me as having been outplayed by Jim.

(Postal 1974: 360)

In 41a, 'I' must necessarily have met Jim for the sentence to be true. But the person 'I' met was Ted in 41b. In short, the person denoted by the direct object must in some way perceive the subject. The subject serves as stimulus of the experience in question, instantiating a causal relation in the psychological context. The subject of strike (A) corresponds to the first argument of the CAUSE-function, so it can be readily defined as 'stimulus causer'. Probably this state CAUSE-function appears only in the psychological context, so it deserves the name 'stimulus CAUSE'.

3. IMPRESS. In this section, we extend our analysis to impress. We will analyze the two uses of impress in 42 by following the same procedures as before.

(42) a. He impresses me as being honest. (A)
    b. The scene impressed me. (B)

Once again, we make use of the labels (A) and (B) to refer to the two impress's.

3.1. FIELD. (B) expresses an emotive meaning, as evidenced by the presence of an adjectival version with a to-phrase. So we attach the field modifier Cognitive to (A), Emotive to (B).

(43) The scene is impressive to me.

3.2. EVENT/STATE. Both can be in the simple present tense and refer to present time. So both (A) and (B) correspond to a STATE.

(44) a. Mary impresses Pete as being kind.
b. The article impresses Mary.

3.3. STRUCTURE. Since *impress (A)* is very much like *strike (A)*, we are naturally led to expect that their semantic structures are identical. In fact, the *as*-phrase syntactically behaves exactly the same way. It is left to the adjunct *with*-phrase. And extraction out of it is allowed.

(45) a. He impresses me as being honest with his sincere words.
   b. *He impresses me with his sincere words as being honest.

(46) What did Tom impress you as?
   He impressed me as being honest.

So we apply the results gained for *strike*’s (A) and (B) to *impress*, thus assuming the same semantic structure.

3.4. CONCEPTUAL STRUCTURES FOR IMPRESS. Now the following conceptual structures result.

(47) Tom impresses me as being honest. (A)
   (Cognitive field)
   [State CAUSE ([TOMi], [Event GO ([i HONEST], [TO ([I])])])]

(48) The scene impresses me. (B)
   (Emotive field)
   [State CAUSE ([SCENE], [Event GO ([ADMIRATION], [TO ([I])])])]

Notice that the difference between (A) and (B) lies in the entity which goes to the person. *Impress* (B) has an incorporated argument ADMIRATION. The meaning is therefore ‘give admiration to someone’s mind’, so his mind comes to be ‘affected’. As a result, it acquires the status as an emotional reaction predicate. On the other hand, *impress* (A) only asserts that a certain idea, an impression, is transmitted to someone’s mind. His or her mind is not affected so that the field is Cognitive.

The embedded GO-function is assigned the feature EVENT because *impress* is also a punctual verb, as can be seen from the incompatibility

---

5 Several dictionaries list the non-psychological use of *impress*. For instance, we find *impress wax with a seal* and *impress a seal on wax* in OALD: 426. However, recourse cannot be taken to the parallelism in this case, for it seems that in present day English this usage is rather old and that *press* is actually used instead. Hence it is practically impossible to check the data by applying grammatical operations. One of my informants even made the remark that *impress* is used only in the psychological sense today.
with the progressive aspect.

(49) a. *John is impressing me as being intelligent.
b. *The article was impressing Mary.

4. It-subject. Strike can also appear in the it—that construction.

(50) It struck me that he was honest.
The status of this strike must be explicated. There are two possibilities. One is that this would be distinct from any of the three strike’s (A), (B), or (C), which would thus necessitate a fourth type of strike (D). The other possibility is that it may be a mere variant of one of the three types. This is also the case with impress.

(51) It impressed me that John had read the whole story.
So we are faced with the following questions: Do the strike in 50 and impress in 51 belong to any of the types so far considered or not? And if they do, which one?

In what follows we will show that strike in 50 is strike (C), and that impress in 51 is impress (B) with the that-clause being extraposed from subject position, by utilizing the three criteria (EVENT/STATE, field, and semantic structure).

4.1. Event/state. Strike (C) is eventive, and impress (B) is stative. So it is expected that impress can be in the simple present, while strike cannot. However, 52 is found in the literature.

(52) It strikes me that Mary is unfriendly.
This may appear to indicate the stativity of strike, which, however, turns out not to be the case. Notice that the simple present counts as a test in so far as it checks the duration of the state of affairs. But the simple present is ambiguous between durational and instantaneous present. This being the case, only the durational present counts as a reliable test. 52, however, undergoes only the instantaneous present interpretation; the speaker is reporting what has come to his mind just at the moment of speech. When the direct object is changed into a third person from a first person singular, the instantaneous present reading is no longer available.

(53) ??It strikes Pete that Mary is unfriendly.
This is because one has access to only one’s own current mental state. How can one be sure of what has just occurred in someone else’s (i.e. Pete’s) mind? Of course, it is possible to know about it later through some medium.
(54) It struck Pete that Mary was unfriendly. On the other hand, *impress* can occur in the simple durational present. So it corresponds to a STATE.

(55) It impresses Pete that Mary is kind.

4.2. FIELD. Although this has not been mentioned up to this point, the difference between Cognitive/Emotive has several consequences. The decisive point is the presence of certain selectional restrictions. The predicates in the Emotive field have two kinds of selectional restrictions, which are not shared by those in the Cognitive field. First, since emotive predicates are factives, the object of emotion must be something that is construed as already present. Certainly one cannot be surprised at, or impressed with something which he himself knows is non-existent. This is characteristic of factive predicates as a whole. Second, the object of emotion must be appropriate for the kind of emotion in question. Different emotions ‘select’ different objects. For instance, the object of surprise is totally different from that of pleasure. One is surprised at something that is unexpected and happens suddenly. But one is pleased with something that gives him satisfaction. These characteristics are inherent in each kind of emotion and are not interchangeable.

These restrictions become obvious especially with *that*-clauses. The first kind of restriction requires that the state of affairs denoted by the *that*-clause be already established with respect to the time of the predicate. In (56), however, John’s winning is not so construed in the presence of the modal auxiliary; hence anomaly results.

(56)*?It surprised me that John would win.

On the other hand, no such restriction exists in the Cognitive field. The object of predicates in this field is an idea, a cognitive entity. Take *seem* as a good example. It just means that a certain idea is present in someone’s mind. The content of this idea need not be retroactive like an emotion and can be future-oriented. One can freely have an idea of something unrealized. So the modal indicative of unrealizedness can freely occur.

(57) It seemed that John would win.

Let us go back to *strike* and *impress*. Since *strike* (C) is Cognitive and *impress* (B) is Emotive, we predict that *impress* and *strike* are just parallel to *surprise* and *seem*. This prediction is borne out as in (58) and (59).

(58)*?It impressed me that John would win.

(59) It struck me that John would win.
The second kind of restriction also confirms our thesis. Thus, as an emotional reaction predicate *impress* requires that its object be something to be favorable and admirable. 60 is bad because the presence of a fault is least likely to be interpreted as favorable.

(60) *It impressed me that there was a hole in that argument.* Furthermore, the following contrast can be readily explained as arising from the difference between two types of *impress.*

(61) a. *It impresses me that Harry is incompetent.*
   b. Harry impresses me as being incompetent.

61a sounds absurd because someone’s being incompetent is far from being admirable. 61b is not contradictory because it only asserts that the impression that Harry is incompetent is transmitted to me.

Besides selectional restrictions, the difference between Cognitive/Emotive brings with it the following contrast. In 62, the *it*-subject of *surprise* is anaphoric, which is not the case with that of *seem.*

(62) a. John is a spy. It surprises me.
   b. *John is a spy. It seems to me.*

Just this contrast is observed with the pair *impress/strike.*

(63) a. John is honest. It impresses me.
   b. *John is honest. It strikes me.*

It is now clear that *strike* is Cognitive, while *impress* is Emotive.

4.3. Structure. Finally, there is one phenomenon suggestive of structural aspect. Postal 1974 observes that in uttering 64a ‘I’ must have actually met Julius Caesar in order to be truthful, which is not the case with 64b.

(64) a. Julius Caesar struck me as honest.
   b. It struck me that Julius Caesar was honest.

(Postal 1974: 358)

This is the effect of a stimulus CAUSE as we have seen in the last chapter. The *strike* in 64a is type (A), whose stimulus CAUSE-function is responsible for ‘my’ necessary encounter with the Roman hero. On

---

6 I owe this insight to Yukio Hirose (personal communication).
7 Halliday 1985 also recognizes the Cognitive/Emotive distinction and calls it the fact/idea distinction. He points out that even the intonation pattern differs between (a) and (b) because of this distinction (245-46).

(a) It strikes me that there’s no-one here. (idea)
(b) It worries me that there’s no-one here. (fact)
the other hand, we are claiming the strike in 64b to be type (C), which lacks a stimulus CAUSE-function in the first place. It is no wonder that no causal relation is found.

The results are as follows: Strike is eventive, Cognitive, and seems to be lacking in a stimulus CAUSE-function. Impress is stative and Emotive. These are just the characteristics of strike (C) and impress (B), respectively. Consequently, the following conceptual structures are obtained.\(^8\)

\[
\begin{align*}
(65) & \quad \text{It struck me that S.} \\
& \quad \text{(Cognitive field)} \\
& \quad \text{[Event GO ([S], [To ([I])])]} \\
(66) & \quad \text{It impresses me that S.} \\
& \quad \text{(Emotive field)} \\
& \quad \text{[State \text{CAUSE}_{\text{Stim}} ([S], [Event GO ([\text{ADMIRATION}], [TO ([I])]])])}
\end{align*}
\]

5. RAISING ANALYSIS. Our discussion so far has been concerned with the distinctions of three strike's and two impress's. It is our contention that these distinctions must be incorporated into the grammar. It is to be expected then that any analysis neglecting these distinctions should prove inadequate. The raising analysis by Chomsky 1981 is just a case in point. Chomsky 1981 analyzes impress as a raising predicate on the bases of the Projection Principle and the \(\theta\)-Criterion.

\[
\begin{align*}
(67) & \quad (i) \quad \text{John impressed me as intelligent.} \\
& \quad (ii) \quad \text{it impressed me as obvious that John would win.} \\
& \quad (iii) \quad \text{NP* impressed me clause (Chomsky 1981: 109)}
\end{align*}
\]

Because impress can take an expletive-it subject as in (ii), Chomsky claims that the subject position impress is a \(\theta\)-position. So impress must have an LF representation like (iii). He further cites 68 as evidence supporting this analysis.

\[
\begin{align*}
(68) & \quad \text{I impressed them, [t as too critical of them, (*themselves, *each other)].} \\
& \quad \text{(Chomsky 1981: 198)}
\end{align*}
\]

With respect to the Binding Theory, NPs appearing in the as-phrase behave as if this phrase constituted a governing category. Pronominals can occur, whereas reflexives and reciprocals cannot. These could be clearly explained away by Binding Conditions A and B, if the as-phrase

\(^8\) Of course, this is a very abbreviatory way of representation. ‘S’ is used to denote a sentence, but this is merely for convenience’ sake.
were a governing category.

Strike is analyzed in an analogous manner.

(69) John strikes Mary as angry at himself (*him, her, *herself).
(70) John, strikes Mary [t, as angry at himself].

(Chomsky 1981: 290–91)

As shown in 69, the as-phrase of strike also behaves as if it were clausal with respect to the binding facts. So Chomsky assumes a clausal as-complement and takes strike to be a raising predicate.

However, these analyses immediately encounter problems, as Chomsky himself seems to admit. The putative ‘raising’ is quite restricted.

(71) a. *There impressed me as being a hole in that argument.
   b. *Tabs impressed me as having been kept on Melvin.
   c. *It impressed me as having snowed in Vermont.

As seen in 71, ‘non-referential expressions’ cannot be ‘raised’: there, idiom chunks, weather-it, respectively. Chomsky himself uses these expressions as tests for clausal structure, so the data in 71 are serious problems indeed. The same is true of strike.

(72) a. It strikes me that there is a hole in that argument.
   b. It struck me that tabs were kept on Melvin.
   c. It struck me that it {snowed } in Vermont.
      {was foggy}

(73) a. *There strikes me as being a hole in that argument.
   b. *Tabs struck me as having been kept on Melvin.
   c. *It struck me as having {snowed } in Vermont.
      {been foggy}

(Postal 1974: 296)

The sentences in 73, which correspond to the allegedly raised versions of 72, are all ill-formed.

Tanaka 1987 argues against this raising analysis. He proposes that the underlying structure for the as-phrase consists of the preposition as and its clausal complement: [[P as] [S [NP PRO][INFL ing][VP ]]]. This seems to be a viable alternative. Note that this analysis, based on independent grounds, also can account for the binding facts by assuming a clausal structure. For details, see Tanaka 1987.

Yet from our point of view, it comes as no surprise that the raising analysis fails. Notice that the two verbs Chomsky tries to relate by the operation of raising are of two distinct types. In the case of impress, for instance, those in 71 belong to impress (A) while those in 74 are impress
(B).

128 ENGLISH LINGUISTICS, VOLUME 5 (1988)

(74) a. It impressed me that tabs had been kept on Melvin.
    b. It impressed me that it snowed in Vermont.

Similarly, those in 72 are strike (C). But those in 73 are strike (A). With both impress (A) and strike (A), the subject position is obviously a θ-

6. CONCLUSION. In this paper, we have analyzed the two psychological predicates strike and impress and posited their conceptual structures

within the framework of Conceptual Semantics advocated in Jackendoff 1983, 1987a, b, c. Since conceptual structure is mainly built up on the

three criteria (EVENT/STATE, field modifier and semantic structure), we have resorted to these three in examining strike and impress, assuming

that psychological strike is parallel to spatial strike.

This paper has revealed two points. First, it is necessary for Conceptual Semantics to introduce the following two mechanisms.

a. a new function: \[\text{State CAUSE}_{\text{Stim}} ([\_], [\_])\]

b. two semantic fields: Cognitive field, Emotive field

Second, there are three strike's and two impress's. These distinctions are indispensable for the grammar, and the following conceptual structures

are called for.

(75) Tom strikes me as being honest. (A)
    (Cognitive field)
    \[\text{State CAUSE} ([\text{TOM}], \text{Event GO} ([i \text{HONEST}], [\text{TO} ([I])]))]\n
(76) The idea strikes me. (B)
    (Emotive field)
    \[\text{State CAUSE} ([\text{IDEA}], \text{Event GO} ([\text{IMPACT}], [\text{TO} ([I])]))]\n
(77) An idea struck me. (C)
    (Cognitive field)
    \[\text{Event GO} ([\text{IDEA}], [\text{TO} ([I])])]\n
(78) Tom impresses me as being honest. (A)
    (Cognitive field)
    \[\text{State CAUSE} ([\text{TOM}], \text{Event GO} ([i \text{HONEST}], [\text{TO} ([I])]))]\n
(79) The scene impresses me. (B)
    (Emotive field)
    \[\text{State CAUSE} ([\text{SCENE}], \text{Event GO} ([\text{ADMIRATION}], [\text{TO} ([I])]))]\n
REFERENCES

——. 1987c. Adjuncts. draft.

LDCE=Longman Dictionary of Contemporary English
OALD=Oxford Advanced Learners’ Dictionary