

Alternation Across Semantic Fields: A Study of Mandarin Verbs of Emotion

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Abstract

In this paper we will explore the consistent contrast between VV-compounds and non-VV-compounds across seven subgroups of verbs of emotion. The distinctive syntactic features for the contrast include the distribution of the grammatical functions, the cooccurrence restrictions with head nouns and head verbs, the compatibilities with the imperative and evaluative constructions, the aspect, and the transitivity. We conclude that the contrast is motivated by event structure properties. To describe a state-type event, the speaker could choose to focus on the inchoative stage or the homogeneous stage of the event. In addition, since VV compounding has the function of type-lifting an event to a referential term, or to refer to its generic properties, it is natural to predict that VV compounding is a predominant source for the verbs of indicating homogeneity.

1. Introduction

Many recent linguistic studies explored how lexical meaning predicts syntactic regularities (Levin 1993, Pustejovsky 1995). One important approach is to study the contrasts in near synonym pairs to identify the minimal semantic attributes that motivate the contrasts (Tsai et al 1998, Liu et al 1997 & 1998). In this current study, we extend the range of the study to a semantic field, which contains more than one synonym pairs. Thus we can attest to the primary status of the proposed semantic attributes by showing that the generalization can be extended to the other synonym pairs in the same semantic field.

Tsai et al (1998) discussed the contrast between the synonym pair KUAILE 快樂 and GAOXING 高興, and based on their findings we re-examine the contrast in a broader range, i.e. the verbs of emotion. We have four results from this study: 1) we find that the contrast is not specific to KUAILE and GAOXING, but to the whole semantic field of verbs of emotion; 2) we define the contrast more precisely; 3) we can trace the cause of the contrast; and 4) we can identify the influence of the compound structure.

In this paper we will examine seven types of emotion verbs, i.e. happy, depressed, sad, regret, angry, afraid and worried. All the observations and statistics in this paper are based on “Academia Sinica Balanced Corpus of Modern Mandarin Chinese” (abbreviated as “Sinica Corpus” in the following texts), which is a tagged Mandarin corpus containing a total of five

million words (CKIP 1995). We consider only the verbs with a frequency of over 40 in Sinica Corpus. The verbs under examination in the paper are listed in Table 1. There're totally 33 verbs. Four of them are monosyllabic and 29 of them are disyllabic.

Subtype	Verbs and the frequency in Sinica Corpus
Happy	KUAILE 快樂(942), GAOXING 高興(669), YUKUAI 愉快(271), LE 樂(264), XIYUE 喜悅(156), KAIXIN 開心(152), HUANLE 歡樂(141), HUANXI 歡喜(107), KUAIHUO 快活(48), TONGKUAI 痛快(40)
Depressed	TONGKU 痛苦(443), TONG 痛(281), NANGUO 難過(232), CHENZHONG 沈重(83), JUSANG 沮喪(62), TONGXIN 痛心(48)
Sad	SHANGXIN 傷心(134), BEISHANG 悲傷(52)
Regret	YIHANG 遺憾(198), HOUHUI 後悔(102)
Angry	SHENGQI 生氣(295), QI 氣(126), FENNU 憤怒(112), QIFEN 氣憤(49)
Afraid	PA 怕(548), HAIPA 害怕(261), KONGJU 恐懼(149), WEIJU 畏懼(40)
Worried	DANXIN 擔心(609), FANNAO 煩惱(199), DANYOU 擔憂(64), FAN 煩(54), YOUXIN 憂心(46), KUNAO 苦惱(45)

Table 1: the verbs of emotion with a frequency of over 40 in the Sinica Corpus.

2. Observations and generalization

According to Tsai et al (1998), the verbs GAOXING “to be happy” and KUAILE “to be glad” differ in the following four aspects: 1) GAOXING takes a sentential object (7%+), while KUAILE cannot, 2) GAOXING takes the sentential-final particle LE (0.7%), while KUAILE cannot, 3) GAOXING never constitutes wish sentences but admits evaluational sentences (1.8%), while KUAILE occurs in wish sentences (2.2%) but never appears in evaluational sentences, and 4) GAOXING forms imperative sentences (1.1%), while KUAILE cannot.

We check the same distinctions with other verbs of emotion and we are surprised to find that most of the observed contrasts above are shared by each subtype of the verbs of emotion. In addition, new distinctions are also added to the list through our thorough observations. According to our study of the seven subtypes of the verbs of emotion, five distinctive features are proposed to make a bipartite classification of the verbs of emotion. The first two features are our new discoveries and are most useful in distinguishing the two groups.

- a. the distribution of their various grammatical functions
- b. the cooccurrence restriction with the head they modify
- c. their appearances in imperative and evaluative constructions
- d. verbal aspect or AKTIONSSART
- e. their transitivity

According to the five criteria all the 29 disyllabic verbs in Table 1 could be divided into two groups. Group A contains the verbs similar to GAOXING, and Group B contains the verbs similar to KUAILE. It's very interesting that for all seven subclasses there is a “default” verb that is the most frequent verb in each group, and for each subclass, the two most frequent verbs form a contrast pair. For the convenience of discussion, only the seven contrast pairs will be thoroughly studied in the following sections.

Subtype	Group A	Group B
Happy	GAOXING 高興(669) KAIXIN 開心(152)	KUAILE 快樂(942) YUKUAI 愉快(271) XIYUE 喜悅(156) HUANLE 歡樂(141) HUANXI 歡喜(107) KUAIHUO 快活(48) TONGKUI 痛快(40)
Depressed	NANGUO 難過(232) TONGXIN 痛心(48)	TONGKU 痛苦(443) CHENZHONG 沈重(83) JUSANG 沮喪(62)
Sad	SHANGXIN 傷心(134)	BEISHANG 悲傷(52)
Regret	HOUHUI 後悔(102)	YIHAN 遺憾(198)
Angry	SHENGQI 生氣(307)	FENNU 憤怒(112) QIFEN 氣憤(49)
Afraid	HAIPA 害怕(261)	KONGJU 恐懼(149) WEIJU 畏懼(40)
Worried	DANXIN 擔心(609) DANYOU 擔憂(64) YOUXIN 憂心(46)	FANNAO 煩惱(199) KUNAO 苦惱(45)

Table 2: the dichotomy of the verbs of emotion

3. The distinctions

In this section we will examine the differences between the two groups from five syntactic aspects: their grammatical functions, their cooccurrence restrictions, the appropriateness in the imperative and evaluative construction, the verbal aspect and the transitivity.

3.1 The grammatical functions

Generally speaking, Group A (i.e. GAOXING) verbs are predominantly used as a predicate, while Group B (i.e. KUAILE) verbs are much more often used as a nominalized event or a nominal modifier. We could see the tendency clearly from the following table. Taking the seven representative pairs as examples, we've found that Group A verbs show a very high tendency of being used as a predicate, i.e. no less than 76.12%, while Group B verbs show a lower tendency of no more than 40.38%. On the other hand, Group A verbs are seldom used as a nominalized event, i.e. no more than 3.07%, while Group B verbs are ten-times as likely to represent a nominalized event (frequency of no less than 26.43%.) Being a nominal modifier, the average frequency of Group B verbs is four times as Group A verbs, i.e. 14.20% to 3.73%.

Group A	Total	Pred.	Nom.	N.M.	Adjunct	Comp.	Else
GAOXING 高興	669	85.05%	0.30%	1.35%	11.96%	1.35%	0.00%
NANGUO 難過	232	86.64%	2.16%	2.59%	4.74%	3.88%	0.00%
SHANGXIN 傷心	134	76.12%	2.99%	11.19%	5.97%	3.73%	0.00%
HOUHUI 後悔	102	94.12%	0.00%	2.94%	2.94%	0.00%	0.00%
SHENGQI 生氣	271	87.82%	0.00%	4.06%	7.75%	0.37%	0.00%
HAIPA 害怕	261	93.10%	3.07%	2.68%	1.15%	0.00%	0.00%
DANXIN 擔心	609	96.72%	1.97%	1.31%	0.00%	0.00%	0.00%

Group B	Total	Pred.	Nom.	N.M.	Adjunct	Comp.	Else
KUAILE 快樂	942	37.79%	26.43%	24.84%	5.73%	5.20%	0.00%
TONGKU 痛苦	443	25.73%	45.60%	20.54%	6.09%	2.03%	0.00%
BEISHANG 悲傷	52	40.38%	28.85%	19.23%	9.62%	1.92%	0.00%
YIHANG 遺憾	198	34.85%	33.84%	3.54%	4.04%	0.00%	23.74% ¹
FENNU 憤怒	112	28.57%	37.50%	17.86%	16.07%	0.00%	0.00%
KONGJU 恐懼	149	23.49%	68.46%	7.38%	2.04%	0.00%	0.00%
FANNAO 煩惱	199	24.12%	69.85%	6.03%	0.00%	0.00%	0.00%

Table 3: the distribution of syntactic functions of the seven pairs

After showing the distribution of the grammatical functions of each verb, now we want to examine the ratio of the two groups in interpreting the same concept. So we have to compare the frequencies of verbs of the same subtype for the three distinctive functions. If there's also consistent contrast between the two groups, it indicates that each of the two groups of verbs do have its own distinctive communicative and functional significance. From the following table we could see that in Sinica Corpus Group A verbs are chosen as a predicate almost **six times** than Group B verbs. On the contrary, Group B verbs are chosen to indicate a nominalized event or a nominal modifier almost **seventeen times** than Group A verbs. The results tell us the most significant functions for distinguishing Group A and B are the functions of being a nominalized event and a nominal modifier.

Group A/B verbs	Predicate Frequency	Ratio of A over B	Nom. & N.M Frequency	Ratio of B over A
KUAILE 高興/GAOXING 快樂	569/356	1.59	11/483	43.91
NANGUO 難過/TONGKU 痛苦	201/114	1.76	11/293	26.64
SHANGXIN 傷心/BEISHANG 悲傷	102/21	4.86	19/25	1.32
HOUHUI 後悔/YIHAN 遺憾	96/69	1.39	3/74	24.67
SHENGQI 生氣/FENNU 憤怒	238/32	7.44	11/62	5.64
HAIPA 害怕/KONGJU 恐懼	243/35	6.94	15/113	7.53
DANYOU 擔心/FANNAO 煩惱	589/48	12.27	20/151	7.55
Average ratio		5.62		16.75

Table 4: the ratio of Group A and B in being predicate and nom. & Nominal Modifier

If we merge the two syntactic behaviors of being a nominalized event and a nominal modifier as the quantitative criterion to "being nominalized", we could effectively divide all the 29 verbs of emotion into Group A and B, as shown in Table 5.² We find from the following table, which is sorted according to the merged percentages of the two functions,

¹ YIHAN could also be used to indicate speaker's judgement as shown in (i). In such cases, it functions as an evaluative adjunct.

(i) 這位藝術家的作品，很遺憾地，今年無法展出。
zhewei yishujia de zuopin hen yihandi jinnian wufa zhanchu
this artist's works very regretfully this year couldn't exhibit

"It's regretful that the works of this artist can't be exhibited this years."

² We may find that even though some verbs in Group B may show low tendency of nominalization, the same verbs necessarily show a high tendency of being a nominal modifier, such as CHENZHONG 沈重, KUAIHUO 快活, and YUKUAI 愉快.

that all verbs in Group B are precisely on the top part of the sorted list, while all verbs in Group A are precisely located at the bottom of the sorted list. Between two groups there's a very obvious gap: all verbs of Group B are nominalized over 24.49% and all verbs of Group A are nominalized less than 14.18%.

Verbs of Group B	Nom	N.M.	Nom. & N.M.	Verbs of Group A	Nom	N.M.	Nom. & N.M.
XIYUE喜悅	90.38%	1.92%	96.00%	SHANGXIN傷心	2.99%	11.19%	14.18%
HUANLE歡樂	31.91%	60.99%	92.91%	DANYOU擔憂	9.38%	0.00%	9.38%
FANNAO煩惱	69.85%	6.03%	75.88%	KAIXIN開心	1.97%	5.92%	7.89%
KONGJU恐懼	68.46%	7.38%	75.84%	YOUXIN憂心	6.52%	0.00%	6.52%
TONGKU痛苦	45.60%	20.54%	66.14%	HAIPA害怕	3.07%	2.68%	5.75%
FENNU憤怒	37.50%	17.86%	55.36%	NANGUO難過	2.16%	2.59%	4.75%
KUAILE快樂	26.43%	24.84%	51.27%	TONGXIN痛心	2.08%	2.08%	4.17%
CHENZHONG沉重	0.00%	48.19%	48.19%	SHENGQI生氣	0.00%	3.58%	3.58%
BEISHANG悲傷	28.85%	19.23%	48.08%	DANXIN擔心	1.97%	1.31%	3.28%
KUNAO苦惱	35.56%	11.11%	46.67%	HOUHUI後悔	0.98%	2.94%	2.94%
YIHANG遺憾	33.84%	3.54%	37.38%	GAOXING高興	0.30%	1.35%	1.65%
JUSANG沮喪	20.97%	12.90%	33.87%	TONGKUAJ痛快	0.00%	0.00%	0.00%
KUAIHUO快活	6.25%	27.08%	33.33%				
HUANXI歡喜	21.50%	9.35%	30.84%				
YUKUAI愉快	7.75%	22.14%	29.89%				
WEIJU畏懼	22.50%	2.50%	25.00%				
QIFEN氣憤	20.41%	4.08%	24.49%				

Table 5: sorted percentages of being a noun and a nominal modifier of the verbs of emotion

3.2 The cooccurrence restriction with the head

When the verbs of the two groups are used as a nominal modifier or an adjunct, they show different degrees of cooccurrence restrictions with the head they modify. Group A verbs can modify a very restricted set of nouns or verbs, while Group B verbs seems to be much freer.

Group A verbs can only modify six types of nouns, i.e. SHIHOU 時候 / SHI 時 “when”, matter/story, mood, facial expressions, person and utterance. Many additional noun classes are modified by Group B, but not Group A, as shown in (1) and (2).

- (1) 快樂的 童年 /快樂的 婚姻 /快樂的 上班族 /快樂的 環境
 kuailedede tongnian /kuailedede hunyin /kuailedede shangbanzu/kuailedede huanjing
 happy childhood/happy marriage /happy workers /happy environment
 “happy childhood/ happy marriage/ happy workers/ happy environment”
- (2) ?高興的 童年 /?高興的 婚姻 /?高興的 上班族 /?高興的 環境
 gaoxingde tongnian /gaoxingde hunyin /gaoxingde shangbanzu/gaoxingde huanjing
 glad childhood/glad marriage/glad workers /glad environment
 “glad childhood / glad marriage / glad workers / glad environment”

As post-verbal adjuncts, both groups can modify transient activities, such as WAN DE

HEN GAOXING 玩得很高興 “play happily” and WAN DE HEN KUAILE 玩得很快樂 “play happily”. However, only Group B verbs can be the adjunct of non-transient (state-like) activities, such as HUO DE KUAILE 活得快樂 “live happily”, GUO DE KUAILE 過得快樂 “live happily”, and AO DE HEN TONGKU 熬得很痛苦 “endure terribly”.

3.3 The imperative and evaluative constructions

Some verbs of emotion could be used in imperative sentences which contain the deontic modal verbs, as in (3). Many of them can also occur in the evaluative sentences which contain the verb ZHIDE 值得 “be worth” or the phrase MEI SHEME HAO ... DE 沒什麼好...的 “be not worth”, as in (4). In either case, they lose the prototypical “command” or “evaluation” meaning. Pragmatically both constructions with verbs of emotion have the same “dissuading” function.³

- (3) 別 傷心 /莫 傷心 /不要 傷心。
 bie shangxin /mo shangxin /buyao shangxin
 don't sad /don't sad /don't sad
 “Please don't feel sad.”
- (4) 不 值得 傷心 /沒 什麼 好 傷心 的。
 bu zhide shangxi /mei sheme hao shangxin de
 NEG worth sad /without anything worth sad PARTICLE
 “It doesn't worth to feel sad. /There's nothing deserve your sadness.
 (Please don't feel sad.)”

From Sinica Corpus we find that 1) all Group A verbs appear in the imperative or the evaluative constructions, and 2) with only one major exception, i.e. the verb FANNAO, Group B verbs do not appear in the two constructions, as shown in Table 6.

Types	Group A				Group B			
	Verbs	Imp.	Eva.	Total	Verbs	Imp.	Eva.	Total
Happy	GAOXING 高興	6	6	12	KUAILE 快樂	0	0	0
Depressed	NANGUO 難過	10	1	11	TONGKU 痛苦	0	0	0
Sad	SHANGXIN 傷心	4	0	4	BEISHANG 悲傷	0	0	0
Regret	HOUHUI 後悔	3	0	3	YIHANG 遺憾	1	0	1
Angry	SHENGQI 生氣	12	0	12	FENNU 憤怒	0	0	0
Afraid	HAIPA 害怕	9	0	9	KONGJU 恐懼	0	0	0
Worried	DANXIN 擔心	78	2	80	FANNAO 煩惱	6	1	7

Table 6: the imperative and evaluative usages of the seven pairs

3.4 Verbal aspect or AKTIONSART

Verb of emotion expresses a mental state. It could indicate either a homogeneous state, as in (5), or an inchoative state, as in (6).

³ In most cases, the verbs of emotion appear in the evaluative constructions are not just expressing speaker's judgement, but to “dissuade” the listener from the stated emotion.

- (5) 他 爲 此 事 傷 心 不 已。
 ta wei ci shi shangxin buyi
 he for this matter sad continuous
 "He feel sad for this for quite a long time."
- (6) 他 一 想 起 妻 子 已 經 死 了， 就 傷 心 了 起 來。
 ta yi xiangqi qizi yijing si le jiu shangxin le qilai
 he once think of wife already die LE then sad LE asp.
 "He felt sad whenever the thought come into his mind that his wife has died."

The particle LE is used to indicate an inchoative state⁴ and could also be used to distinguish the two groups. We find in Sinica Corpus that in each contrast pair, the verb in Group A associates with the particle LE more times as the one in Group B, as shown in Table 7.

Types	Group A		Group B	
	Verbs	Frequency	Verbs	Frequency
Happy	GAOXING 高興	20	KUAILE 快樂	10
Depressed	NANGUO 難過	9	TONGKU 痛苦	0
Sad	SHANGXIN 傷心	2	BEISHANG 悲傷	1
Regret	HOUHUI 後悔	7	YIHANG 遺憾	0
Angry	SHENGQI 生氣	14	FENNU 憤怒	0
Afraid	HAIPA 害怕	5	KONGJU 恐懼	2
Worried	DANXIN 擔心	6	FANNAO 煩惱	3

Table 7: emotional verbs' association with the sentential final particle LE

3.5 Transitivity

The verbs of emotion take either a cause event or a goal⁵ as the direct object. In last section we've shown that a verb of emotion could indicate an inchoative state. A new state does not happen without a cause and thus pragmatically all the emotion could be caused by an event. But syntactically only the verbs of happiness, afraid and worried usually take the cause event as the object. More precisely, only Group A verbs of happiness, afraid and worried could take the cause event as the direct object, while Group B verbs can't, as demonstrated in (5) and (6),⁶ as well as Table 8.

⁴ Li & Thompson (1981), among others, characterized the sentential-final particle LE as marking a new state, and LE attached to a verb as marking the perfective aspect. However, the particle LE after the state verbs is used to indicate a change of the state, no matter it is located after the verb or the whole sentence.

⁵ A goal is a referential entity, and in most cases a human. Though the goal could also be viewed as the causer of the emotion, it could be easily distinguished from cause events.

⁶ For those verbs which don't take the cause event as the direct object, the cause event shows up in other positions, such as an adjunct PP(i), or clause(ii).

- (i) 爲 了 這 件 事， 我 曾 傷 心 了 好 久。
 weile zhe jian shi wou ceng shangxin le hao jiu
 for this piece matter I ever sad LE quite long time
 "I've felt sad for the matter for quite a long time."
- (ii) 母 子 竟 不 得 見 面， 怎 麼 能 不 傷 心 呢？
 mu zi jing bude jianmian zhenme neng bu shangxin ne
 mother son dare couldn't meet how can not sad NE
 "How can't they feel sad since the mother and the son can't meet each other."

(7) 他們 很 高興 張三 沒 走。(Tsai 1998)
 tamen hen gaoxing zhangsan mei zou
 they very glad John doesn't go
 "They were glad that John didn't go."

(8) *他們 很 快樂 張三 沒 走。(Tsai 1998)
 tamen hen kuaile zhangsan mei zou
 they very glad John doesn't go
 "They were happy that John didn't go."

As to the argument "goal", only the verbs of angry, afraid and worried semantically take this kind of argument and thus syntactically take them as the direct object. However, we've found in Sinica Corpus that only Group A verbs in those types could take the goal as the direct object, while Group B verbs as a rule don't take the goal as the direct object, as shown in the following table.

Group A	-Cause Event		-Goal	Group B	-Cause Event		-Goal
	-VP/S	-Event N	-Simple N		-VP/S	-event N	-Simple N
GAOXING 高興	69	3	0	KUAILE 快樂	0	0	0
SHENGQI 生氣	0	0	0/12 ⁷	FENNU 憤怒	0	0	0
HAIPA 害怕	68	9	8	KONGJU 恐懼	3	0	2
DANXIN 擔心	285	17	35	FANNAO 煩惱	2	0	2

Table 8: the transitive usages of the four representative pairs

4. Semantic explanation

In this section we will first summarize the contrast, and then propose a semantic explanation.

4.1 The distinctive features

In section 3 we've shown the syntactic basis for our bipartite classification of the verbs of emotion. There're five syntactic distinctive features and we should notice that each of them is not a YES-NO criterion. The two groups differ in term of tendency. One of the two groups dominate in each of the five grammatical representations, as shown in the following.

Group A verbs:

1. Function mostly as a PREDICATE and seldom used as a noun or a nominal modifier;
2. Have strict cooccurrence restriction with the head when they are used as a nominal modifier or a post-verbal adjunct;
3. Often appear in imperative or evaluative constructions;
4. Often representing inchoative states; and
5. Often taking a cause event or a goal as their direct object.

⁷ Generally speaking, SHENGQI is always an intransitive verbs, and the object can only be inserted to the verb, such as SHENG TA DE QI 生他的氣.

Group B verbs:

1. Are more likely to be a **NOMINALIZED EVENT** or a **NOMINAL MODIFIER** than Group A verbs and they are not as often used as a verb as Group A verbs;
2. Have wider range of cooccurrence restriction with the head when they are used as a nominal modifier or a post-verbal adjunct;
3. Seldom used in imperative or evaluative constructions;
4. Rarely co-occur with inchoative state; and
5. Seldom take a cause event or a goal as their direct object.

4.2 The semantic basis for the bipartite classification

Take note that the 14 verbs we study form seven contrast pairs belonging to the same semantic field. If the same consistent contrasts differentiate all seven pairs, we may assume that there is a fundamental semantic motivation underlying all these contrasts. It will be highly unlikely if these five contrasts were each independently motivated and all seven contrast pairs have the identical distribution of all the semantic attributes involved.

It is also important to note that each two verbs in a contrast pair differ minimally in semantics and are mutually substitutable in many contexts. We may understand the behavioral contrasts we observed better by rephrasing the question as follows:

Why is Group A verbs chosen over Group B verbs (and vice versa) in construction X?

In light of this question, we will be more likely to identify the inherent semantic distinction between the two groups and the bipartite contrast may turn out to be the result of semantically primary contrast. In anticipation of this interpretation we summarize and re-organize the contrast between the two groups as follows:

Linguistic Instantiation	Group A	Group B
Predicate	Strong	Weak
Inchoative states	Predominate	Rare
Transitivity	Strong	Weak
Imperative or evaluative constructions	Predominate	Rare
Adjuncts to non-transient activities	Rare	Predominate
Adjuncts to nouns	Weak	Strong
Nominalization	Rare	Predominate

Table 9: contrasts in linguistic distribution

From the above contrast, we can see that all the distinctive linguistic instantiations are related to event structure properties. Generally speaking, Group A is preferred to indicate **transition**, while Group B is preferred for **homogeneity**. In particular, when we want to indicate a change of state, such as with the change-of-state LE, we usually use Group A verbs. When an object or cause is represented to focus on the transition to new state, again Group A verbs are preferred. When dissuasion is intended, Group A verbs are usually used in the imperative and evaluative constructions.

On the other side, Group B verbs are preferred to indicate continuous and homogeneous states. That's why only Group B verbs are used to modify non-transient verbs and ascribe attributes to nouns. That's also why it is Group B verbs are preferred as deverbal nouns, since a referential entity is regarded as a whole unit and thus homogeneous composition is implied.

5. Discussion

In this section we will explore and explain the close relationship between the sub-lexical structure of these compound verbs and the bipartite classification.

5.1 The sub-lexical structure of these compound verbs

It is interesting to find that the inter structures of these compounds are related to the distinctions of the two groups. From the following lists we may find that 14 of 16 verbs in Group B are VV compounds, while all 13 verbs in Group A are not VV compounds.

Group A: GAOXING 高興(non-VV), NANGUO 難過(non-VV), HOUHUI 後悔(non-VV), TONGKUAI 痛快(non-VV), DANYOU 擔憂(non-VV), SHENGQI 生氣(non-VV), CHIJIN 吃驚(non-VV), DANXIN 擔心(non-VV), SHANGXIN 傷心(non-VV), KAIXIN 開心(non-VV), YOUXIN 憂心(non-VV), TONGXIN 痛心(non-VV), HAIPA 害怕(non-VV)

Group B: KUAILE 快樂(VV), XIYUE 喜悅(VV), HUANLE 歡樂(VV), FANNAO 煩惱(VV), KONGJU 恐懼(VV), TONGKU 痛苦(VV), FENNU 憤怒(VV), CHENZHONG 沈重(VV), BEISHANG 悲傷(VV), KUNAO 苦惱(VV), YIHANG 遺憾(AN or VO)⁸, JUSANG 沮喪(VV), KUAIHUO 快活(VV or AV)⁹, HUANXI 歡喜(VV), YUKUAI 愉快(VV)

5.2 A semantic interpretation for the VV compounds

We have shown that all VV compounds under examination belong to Group B, which means that all VV compounds are usually used to indicate homogenous states. We argue that it's due to some semantic properties of VV compounds.

Generally, VV compounds are distinguished from the SV, VO, AV and VR compounds by the compounding process which incorporates different semantic components to the event structure. In contrast to the other major structures of verb compounding, VV compounds

⁸ YIHAN could be viewed as a VO compound verb, but also an AN compound noun, because it could be interpreted as an abbreviation of the idiom: YICHUZHIAN 遺珠之憾 “the regret of missing one pearl”, and thus be realized as a noun. If it's true, YIHAN is originally as a noun. As a verb of emotion, it is a denominal verb formed through abbreviation.

⁹ The inner structure of KUAIHUO is hard to decide. It might be VV (happy and vivid) or AV (live happily).

has an important characteristic. In all the other constructions, the V takes one more constituent to elaborate on the event to make it either more complete or more specific. In SV the subject is added to the event structure, in VO an object is incorporated into the event structure, in AV the manner of executing an action is described, and in VR the result of the action is clearly indicated. But a VV compound is leading to another direction. In VV, the concept of an event is “diffused” after combining two similar events, since speaker will extract the common attributes of the pair. It is a common morpho-lexical strategy in Mandarin to concatenate two antonyms or synonyms to form the concept of “kind” or “property”. For example, the word DAXIAO 大小, which is composed of DA “big” and XIAO “small”, means “size”.

Since the concept of an event is diffused or lifted to “kind/property”, it’s natural for the VV compounds to be chosen to indicate a homogeneous state, but awkward to indicate an inchoative state. That’s why we usually select VV compounds to indicate a more referential context, such as a nominalized event or a nominal modifier. It’s also a natural consequence that the VV verbs of emotion are seldom chosen to be used in imperative and evaluative constructions, since in both constructions transitional verbal characteristics are highlighted, which is contrary to the nature of a VV compound.

6 Conclusion

In this paper we have illustrated a consistent contrast in seven types of the verbs of emotion and also propose a semantic interpretation to the contrast. Generally speaking, Group A verbs could be used to indicate inchoative states, and thus are mainly used as a predicate and could be used transitively and in imperative and evaluative constructions. On the contrary, Group B verbs can only indicate homogeneous states, and thus show higher tendency of nominalization and are used as powerful modifiers in being a nominal modifier or an adjunct.

We have found that all VV compounds belong to the second group and proposed a semantic explanation for the distribution. In the process of composing an event structure, the VV compound is undergoing a process of merging two individual events and creates a fuzzy concept to contain both events, while the other compounds are undergoing a process of adding a component to the event structure and thus create a more concrete and precise concept.

On the research of the regularities between word meaning and it’s syntactic behaviors, it’s very important to distinguish the construction meaning and the core meaning. We believe that the regularities we’ve extracted from the VV compounds in the semantic field of emotion exist in all Mandarin VV compounds. A preliminary study shows that all VV compounds in Sinica Corpus do have a higher tendency of nominalization. We will continue our research on VV compounds and expect more findings on the constructions meaning of compounds.

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