writing/reading interface

AWLL14 International workshop on writing systems and literacy

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Japanese *rubi*:
Finessing the writing/reading/meaning interface

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0 Prelude: Requisite outline of the Japanese writing system (JWS)

Standard convention of graphematic representation is to employ multiple scripts together in largely separate + complementary ways.

Various scripts serve to differentiate between content + grammatical words and, to a lesser degree, between lexical strata (Joyce & Masuda, 2018; 2019; Taylor & Taylor, 2014; Tranter, 2008).

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1 漢字 kan-ji [morphographic]: Native- (NJ) + Sino-Japanese (SJ) content words

2 平仮名 hira-ga-na [syllabographic]: Functional words (inflections + particles)

3 片仮名 kata-ka-na [syllabographic]: Foreign-Japanese (FJ) [but not Chinese]

4 ローマ字 rōma.ji *Latin letters* [segmental]: Foreign words + names

5 数字 sū-ji *Arabic numerals*: Widely used to represent numbers

* Glosses without slashes; - for kanji-kanji boundary; . for kanji-kana boundary

1 What is ルビ /rubi/? 1: Initial definition

Rubi inclusively denotes small-font materializations of marginal annotations, the basic practice, + its multifarious applications (Ariga, 1989; Joyce & Masuda, 2019; Okada et al., 2021; Tranter, 2008; Wakabayashi, 2006).

A graphematic convention that has emerged within the historical development of the JWS + its multiple scripts.

1 What is ルビ /rubi/? 1: Initial definition

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A graphematic convention that has emerged within the historical development of the JWS + its multiple scripts.

Qualification 1: Beneficial to distinguish from the narrower notion of 振り仮名 fu.ri.ga-na *pronunciation glosses* (even though often used interchangeably).

Gottlieb (1991: 286) [Glossary entry]
furigana   *kana* glosses of Chinese characters, showing pronunciation

Taylor and Taylor (2014: 290) Furigana ('annotating Kana') are Kana written small to accompany words written in other scripts to provide additional information on the words, such as their sounds and meanings.

2 Prototypical example of furigana

Example	Elements	Scripts	Pronunciation	Meaning
にほんご 日本語	RUBI BASE	hiragana kanji	nihongo nihongo	*Japanese language*

Base-rubi demarcation derives purely from typography; linguistically, it is often difficult to judge which representation is primary.

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3 How is rubi relevant to the writing/reading interface?

[small stepping stone to the core research topic to come …]
Furigana application is a simple, yet elegant, device for bridging the writing/reading interface for kanji, available whenever deemed expedient.

Accordingly, the principal uses of furigana are within instructional settings (both L1 + L2) + public information contexts, particularly for foreigners.

Japanese textbooks adhere to the Ministry of Education's scaffolding approach to kanji instruction.

Within subject textbooks, the level of kanji scaffolding corresponds to kanji grade-level.

For example, this is from a history textbook for grade 6 (12-yr-olds).
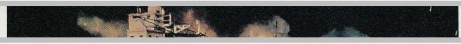
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Enlarging the text section, clearly, some words represented in kanji have furigana attached, but others do not.

戦争が世界に広がる　日本が中国の各地で戦争をしていたころ，ヨーロッパでは，ドイツがまわりの国々を侵略(しんりゃく)し，1939（昭和(しょうわ)14）年，これに反対するイギリスやフランスなどと戦争になりました。こうして，アジアもヨーロッパも戦場となる第二次世界大戦となりました。

　日本は1940年，石油などの資源(しげん)を得るために，東南アジアに軍隊を進めました。また，ドイツ，イタリアと軍事同盟(どうめい)を結び，アジアの地域(ちいき)を支配しようとしました。このため，イギリスやアメリカなどと激(はげ)しく対立するようになりました。

5 Furigana example 3: City hall notice for foreign residents

Notice about a change of opening times is using "plain Japanese".

2023年10月2日より

つくば市役所の うけつけじかんが かわります

月曜日から金曜日　8:45〜16:30

土曜日の　「休日窓口」の　うけつけじかんも　8:45〜16:30になります

◎第2・第4木曜日の「延長窓口」の じかんは かわりません。よるの 19:30 まで うけつけしています。

市民窓口センター、地域交流センター、保健センターも10月2日から
うけつけじかんが　8:45 〜16:30 に かわります

市民窓口センター …大穂・豊里・谷田部・桜・筑波・茎崎
地域交流センター …筑波・大穂・吉沼・豊里・谷田部・松代・二の宮・春日・島名・
小野川・桜・栗原・竹園・並木・広岡・吾妻・茎崎
保健センター …大穂・谷田部・桜

City of Tsukuba

https://www.city.tsukuba.lg.jp/plainjapanese/index.html

Notice about a change of opening times is using "plain Japanese".

So, うけつけじかん uketsuke jikan *reception times* is in hiragana (not standard kanji of 受付時間), but all place names are rendered in kanji with furigana annotations!

https://www.city.tsukuba.lg.jp/plainjapanese/index.html

6 Tracing the rubi spectrum 1: Beyond prototypical furigana

Furigana – hiragana-rubi added to kanji-bases – is unquestionably the prototypical application of the rubi graphematic convention.

However, as described in prior studies (Joyce, et al. 2012; Joyce & Masuda, 2019), graphematic variation is a pervasive characteristic of the JWS, which also extends to rubi.

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Wilkerson and Wilkerson (2000) appropriately embrace a wider spectrum within their interesting discussion of rubi annotations.

In their matrix of intersections between kanji, hiragana, katakana + rōmaji as base-words + as rubi, most cells are filled with attested examples.

Yet, as the matrix has some empty cells (most notably, for same-script base+rubi cases) + it excludes numbers, it is fair to claim that it fails to appreciate the full range of rubi applications.

Moreover, rubi is not a peripheral graphematic practice only used for instructional settings + public information contexts. It is an *integral* convention of the contemporary JWS.

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Sasahara (Ed.) (2010) = rare dictionary compilation

[Our abridged (+ liberal) translation of the publisher's website description]
Contains rubi examples … with references on an unprecedented scale!

- Includes many rubi annotations commonly used in real life, but difficult to find in dictionaries …
- Sources include comics, lyrics, television, magazines, novels, advertisements, etc.
- Approx. 11,000 entries + approx. 23,000 rubi annotations.

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Yet, as rubi elude easy compilation, fair to regard as dated + narrow sampling of frequent examples.

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* Abbreviations: B base; R rubi; C kanji, H hiragana; K katakana; L rōmaji; N numerals; P pronunciation; M meaning

はるかぜは、
子供たちを大切に

station-display C-B+H-R
train-flyer C-B+H-R+L-R
P Harukaze

はるかぜ
東風小学校

つくば国際大学
は　る　か　ぜ
東風小学校

HARUKAZE ELEMENTARY SCHOOL

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train-flyer
C-B+H-R
P Ōyama

はるかぜ
東風小学校

つくば国際大学
東風小学校
HARUKAZE ELEMENTARY SCHOOL

大山
絵とうろう
まつり

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station-display C-B+H-R
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P Harukaze

train-flyer
C-B+H-R
P Ōyama

station-display
C-B+H-R
P Teori
[word-play]

* Abbreviations: B base; R rubi; C kanji, H hiragana; K katakana; L rōmaji; N numerals; P pronunciation; M meaning
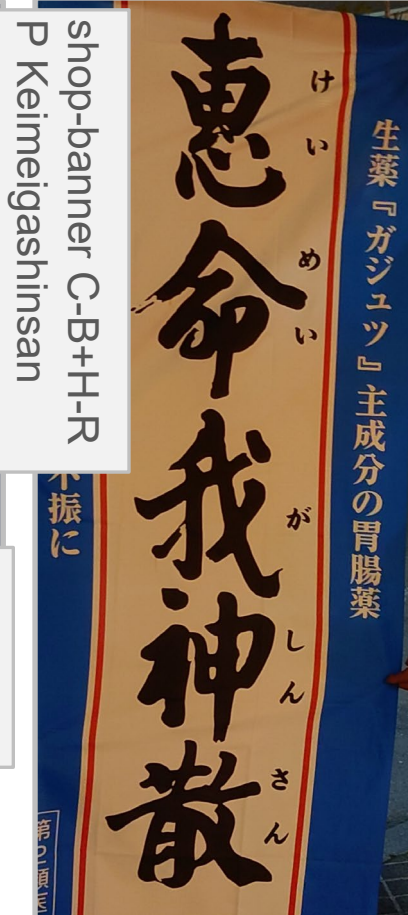
はるかぜは、子供たちを大切に

はるかぜ
東風小学校

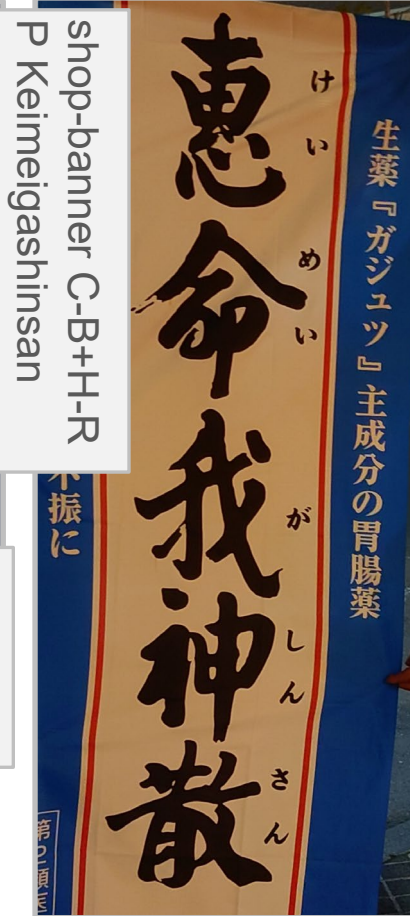つくば国際大学

station-display C-B+H-R
train-flyer C-B+H-R+L-R
P Harukaze

東風小学校
HARUKAZE ELEMENTARY SCHOOL

おお
やま
大山

train-flyer
C-B+H-R
P Ōyama

絵とうろう
まつり

手緒里うどん

ゆうき、つむぎの郷

て
お
り
手緒里

station-display
C-B+H-R
P Teori
[word-play]

shop-banner C-B+H-R
P Keimeigashinsan

けい
めい
が
しん
さん
恵命我神散

生薬『ガジュツ』主成分の胃腸薬

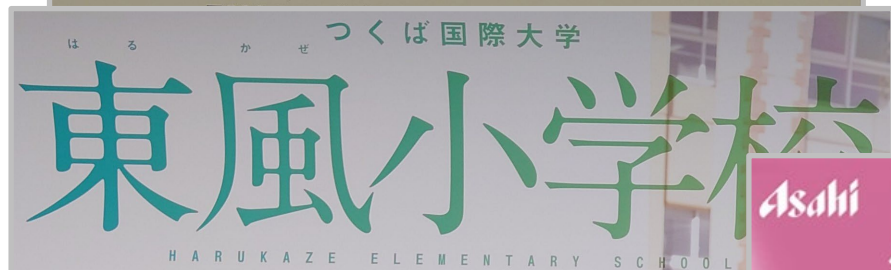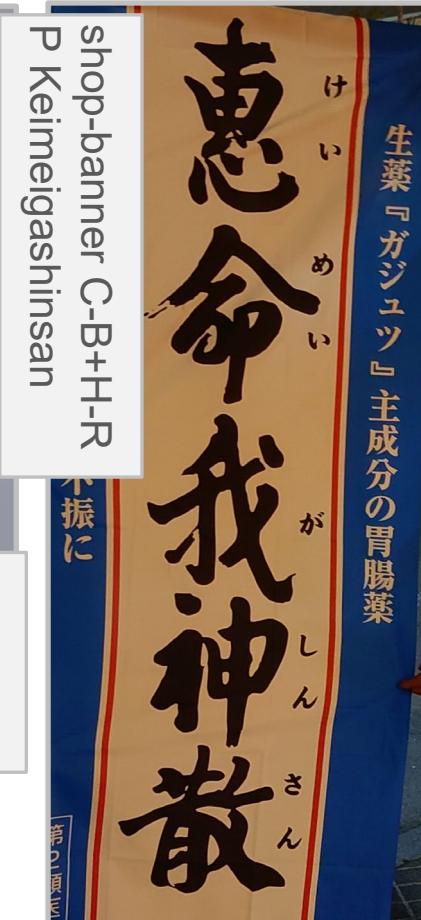* Abbreviations: B base; R rubi; C kanji, H hiragana; K katakana; L rōmaji; N numerals; P pronunciation; M meaning

station-display C-B+H-R
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はるかぜは、
子供たちを大切に

はるかぜ
東風小学校

つくば国際大学
東風小学校
HARUKAZE ELEMENTARY SCHOOL

ユー
You 銀座 青山 矯正歯科
銀座 新宿 医院 池袋 医院

station-display
L-B+K-R
P You
[orthodontic clinics]

train-flyer
C-B+H-R
P Ōyama

おお
大山
やま
絵とうろう
まつり

ゆうき、つむぎの郷
手緒里
てお

station-display
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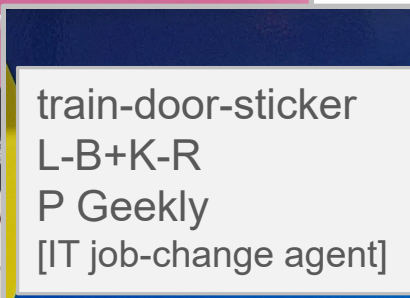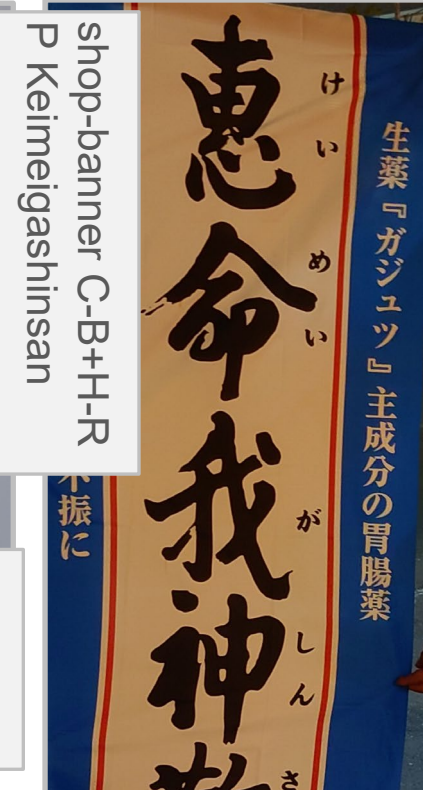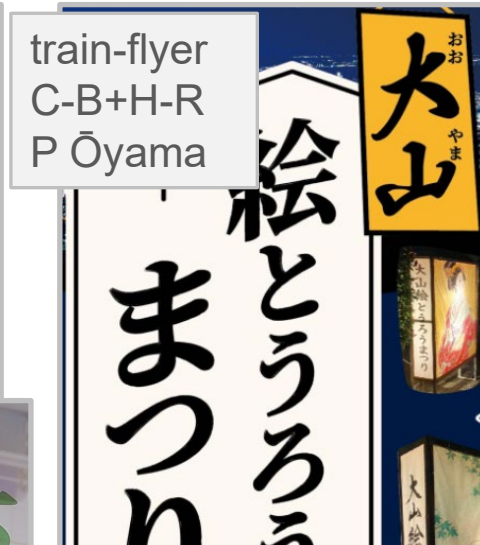train-flyer C-B+H-R+L-R
P Harukaze

train-flyer
C-B+H-R
P Ōyama

shop-banner C-B+H-R
P Keimeigashinsan

station-display
C-B+H-R
P Teori
[word-play]

station-display
L-B+K-R
P You
[orthodontic clinics]

product-image
L-B+K-R
P **Slim**up**Slim**

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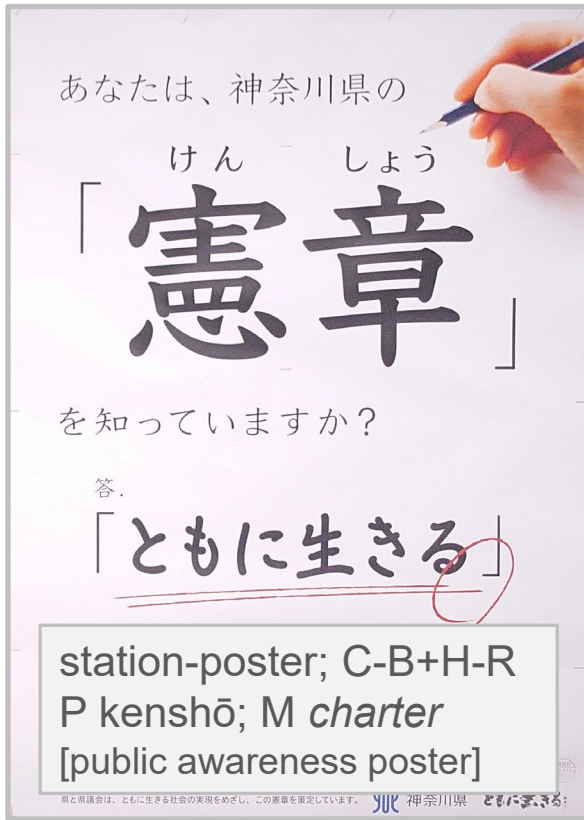train-flyer C-B+H-R+L-R
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東風小学校

つくば国際大学
はるかぜ
東風小学校
HARUKAZE ELEMENTARY SCHOOL

ユー
You
銀座 青
銀座 矯 新

station-display
L-B+K-R
P You
[orthodontic clinics]

train-flyer
C-B+H-R
P Ōyama

おお
やま
大山
絵とうろ
まつり

Asahi
スリム アップ スリム
Slim up
Slim
SHAKE
美容 × カロリ
コラーゲン

product-image
L-B+K-R
P **Slim**up**Slim**

train-door-sticker
L-B+K-R
P Geekly
[IT job-change agent]

ゆうきつむぎの郷
て
お
手緒里

station-display
C-B+H-R
P Teori
[word-play]

shop-banner C-B+H-R
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ギークリー
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ギークリー

station-poster; C-B+H-R
P kenshō; M *charter*
[public awareness poster]

station-poster; C-B+H-R
P kenshō; M *charter*
[public awareness poster]

station-display
C-B+H-R
[train etiquette]

あなたは、神奈川県の
「憲章」
を知っていますか？
答.
「ともに生きる」

station-poster; C-B+H-R
P kenshō; M *charter*
[public awareness poster]

マナーで示そう、思いやり

乗るならば

station-display
C-B+H-R
[train etiquette]

河北新報ご購読の申し込みは
フリーダイヤル　オオ　ク　ミ　ナ　ヨ　ム
0120 09-3746

合わせ　ヒ　ロ　イ　ハ　コ　ナ　ラ
0120-161857
root-storhub.com

やさしく　よみいい
0120(89)4311
静岡新聞社　読者プロモーション局まで

mnemonics for company telephone numbers
1 magazine-ad; Kahoku Newspaper; N+K; M *lots of people read*
2 store-sign; Root Storhub; N+K; M *for a spacious box*
3 magazine-ad; Shizuoka Newspaper; N+H; M *gentle, good-read*

あなたは、神奈川県の
けん しょう
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答.
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station-poster; C-B+H-R
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ぶぶんきょうせい
https://bubunkyousei.com

mnemonics for website of You orthodontic clinics
station-display; L+H; M *partial correction*

K   maji   *true, serious, earnest…*

C   honki   *serious*

Tachihara, Ayumi. (1986-1998). *Maji*. [manga series]

L   Sukoshi Fushigi   *a little mysterious*

L   SF   *science fiction*

Ad-image for Fujiko F. Fujio's SF short collection
[Doraemon creators; children's manga]

K   maji   *true, serious, earnest…*

C   honki   *serious*

Tachihara, Ayumi. (1986-1998).
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Sukoshi Fushigi

SF 短編

L   Sukoshi Fushig[i]

L   SF

Ad-image for Fujiko
[Doraemon creators; c

K   maji   *true, serious, earnest…*

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H   are dake no koto   *something quite special*

C   kōshōjutsu   *negotiation skills*

→ *It's going to require* **some quite special negotiation
   skills** *…*

Torii, Maa. (2023) The *flower-hating princess of flower-
crown kingdom* [manga series]

交渉術を
する必要がある
ということは…

モーニング・ルーティン
奇跡の朝習慣

K   mōningu-rūtin   *morning routine*

C   asa shūkan   *morning habits*

miraculous **morning routine**

[advert slogan for lifestyle guidebook]

奇跡の朝習慣
モーニング・ルーティン

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miraculous **morning routine**

[advert slogan for lifestyle guidebook]

運転でも海でも
素足姿が
エレガントに！
ドライブ　ビーチ

K　doraibu　*drive*

C　unten　*drive*

K　bīchi　*beach*

C　umi　*sea*

elegant barefoot look whether **driving** *or at the* **beach**!
[SAFARI (2023/9) feature for Gucchi horse-bit loafers]

モーニング・ルーティン
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*elegant barefoot look whether **driving** or at the **beach**!*
[SAFARI (2023/9) feature for Gucchi horse-bit loafers]

こんな場面なら
この服の出番! VOL 03

K   shīn   *scene*   K   uea   *wear*

C   bamen   *drive*   C   fuku   *clothes*

*this **outfit** is just right for this kind of **scene**!*
[SAFARI (2023/8) feature on travel fashion]

奇跡の朝習慣
モーニング・ルーティン

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こんな場面ならこの服の出番! VOL 03
シーン
ウエア

K　shīn　*scene*　K　uea　*wear*

C　bamen　*drive*　C　fuku　*clothes*

this **outfit** *is just right for this kind of* **scene**!

[SAFARI (2023/8) feature on travel fashion]

美容が毎日を「楽」にする
たのしく
ラク

H　tanoshiku　*fun*

C　楽

K　raku　easy

word-play contrasts two meanings of base-kanji linked to its NJ + SJ readings.

beauty care makes everyday **fun** / **easy**

[Arimura Miki, (2023/8), BEAUTY HACK, 『美的』Biteki]

12 Definition qualification 2

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In that respect, following description [of translation uses] has considerable merit.

Wakabayashi (2006: 3) … *rubi*, marginalia juxtaposed alongside words or phrases to fulfil a multitude of functions. Moving far beyond their original role of a phonetic aid, *rubi* are often used bivocally to produce not only two unrelated pronunciations of a word but also an extra semantic layer, helping to transcend the limitations of conventional translational equivalents. *Rubi* glosses can enhance a word's expressiveness, emphasize, exaggerate, elucidate or delimit its meaning, convey a different register or speech mode, or act as a paraphrase or inside joke….
Rubi can also have a subversive function, destabilizing the headword by qualifying or relativizing its meaning or acting as an intimate critique or commentary. Thus these in-text excurses often exist in a state of tension, an uneasy embrace, with the words to which they are attached.

Essentially an extension of Joyce and Masuda (2019), which focused on the pervasive nature of graphematic variation within the JWS.

More specifically, that paper proposed a tentative framework to account for the motivating factors underlying graphematic variants in terms of two dimensions.

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Conventionality: Referring to the prescriptive *standard* conventions associated with each component script.

Intentionality: Notion that seeks to locate the motivating factors under three broad categories of (1) message content, (2) script sensibilities + (3) creative representations, with nine sub-categories in total.

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More specifically, that paper proposed a tentative framework to account for the motivating factors underlying graphematic variants in terms of two dimensions.

Conventionality: Referring to the prescriptive *standard* conventions associated with each component script.

Intentionality: Notion that seeks to locate the motivating factors under three broad categories of (1) message content, (2) script sensibilities + (3) creative representations, with nine sub-categories in total.

Of the nine sub-categories, at least four have direct or indirect relevance for rubi annotations, as the next slide indicates.

14 Core topic 2: Rubi-related motivations (Joyce & Masuda, 2019)

Audience [message context] specifically covers furigana within instructional settings + public information contexts (i.e., earlier textbook example).

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Script associations [script sensibilities] intimately influence all graphematic representations, but manipulations of the script associations for base-word and rubi contrasts can produce particularly striking effects.

Playful rubi [creative representations] explicitly recognized as a motivating factor underlying many creative representations involving rubi (i.e., cited aptly amusing telephone number mnemonic for a pest extermination company).

K   iya mushi mushi   *horrible insects insects*
N   [phone number]   [phone number mnemonic]

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The primary dimension consists essentially of a binary contrast between:

(1) Graphematic variants: Base + rubi are different graphematic representations of the same word; and

(2) Semantic fusions: Base + rubi are conjunctions of different words.

This distinction is of significance for thinking about the interface between writing/reading and to meaning (as illustrating from next slide).

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Secondary dimension extends on the notion of intentionality to capture the wider range of effects that rubi annotations can materialize.

Seeking to identify an attribute checklist of both the diverse materializations + functions of rubi, which often overlap simultaneously.

As our deliberations draw inspiration from the Triangle Model of visual word recognition, in terms of its basic notion of spreading activation, it is appropriate to briefly remind everyone of its configuration.

Seidenberg and McClelland (1989) proposed this general framework for lexical processing, with orthography, phonology and meaning information forming a triangle structure.
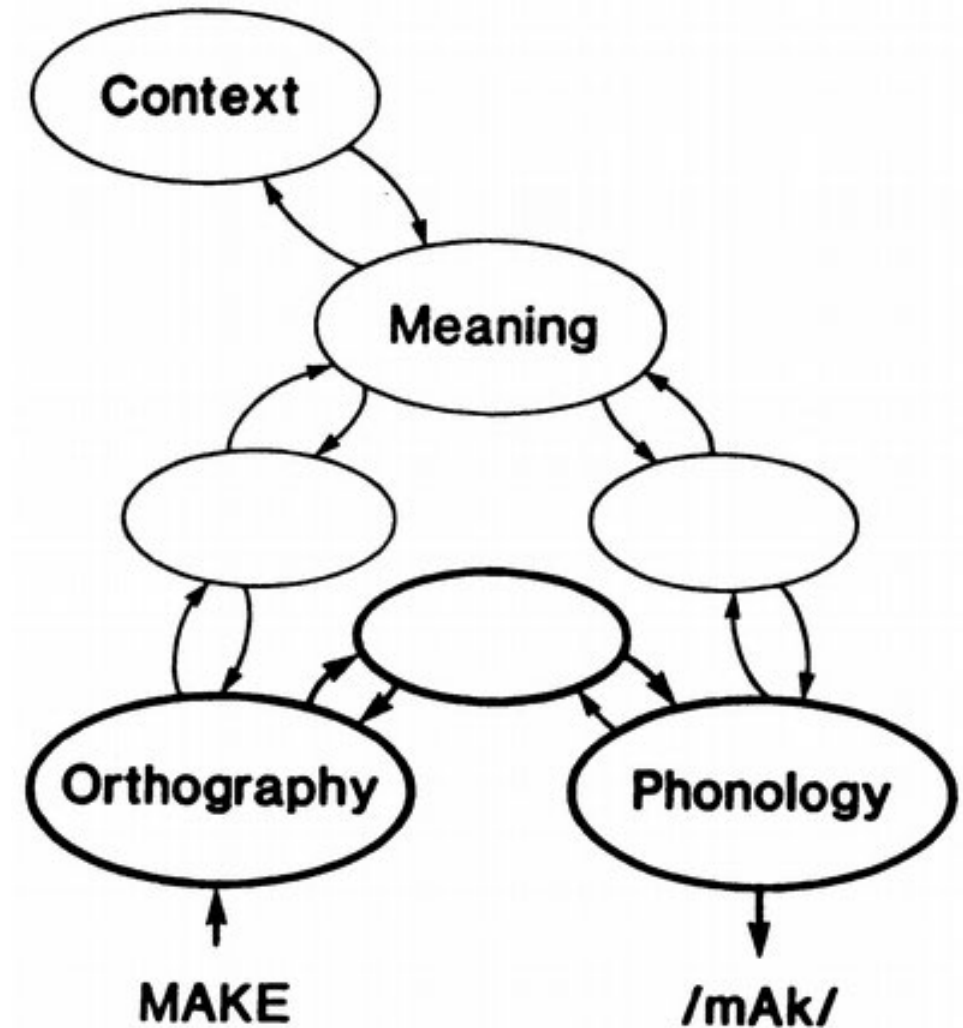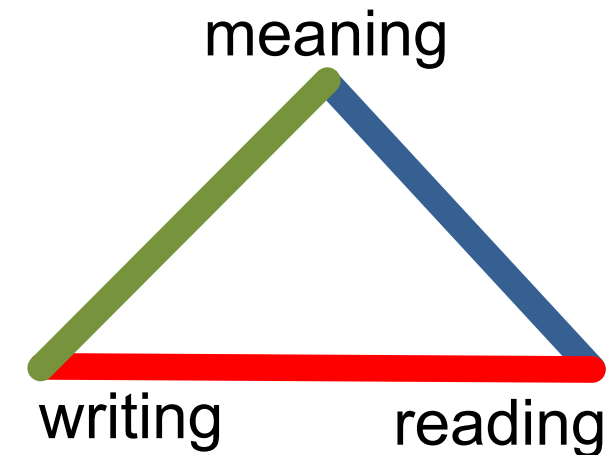

Seidenberg & McClelland's (1989: 526) General framework for lexical processing

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Visually simplified + more closely aligned with AWLL14's theme, this schematic tweaks the labels to writing, reading and meaning, respectively.

meaning

writing   reading

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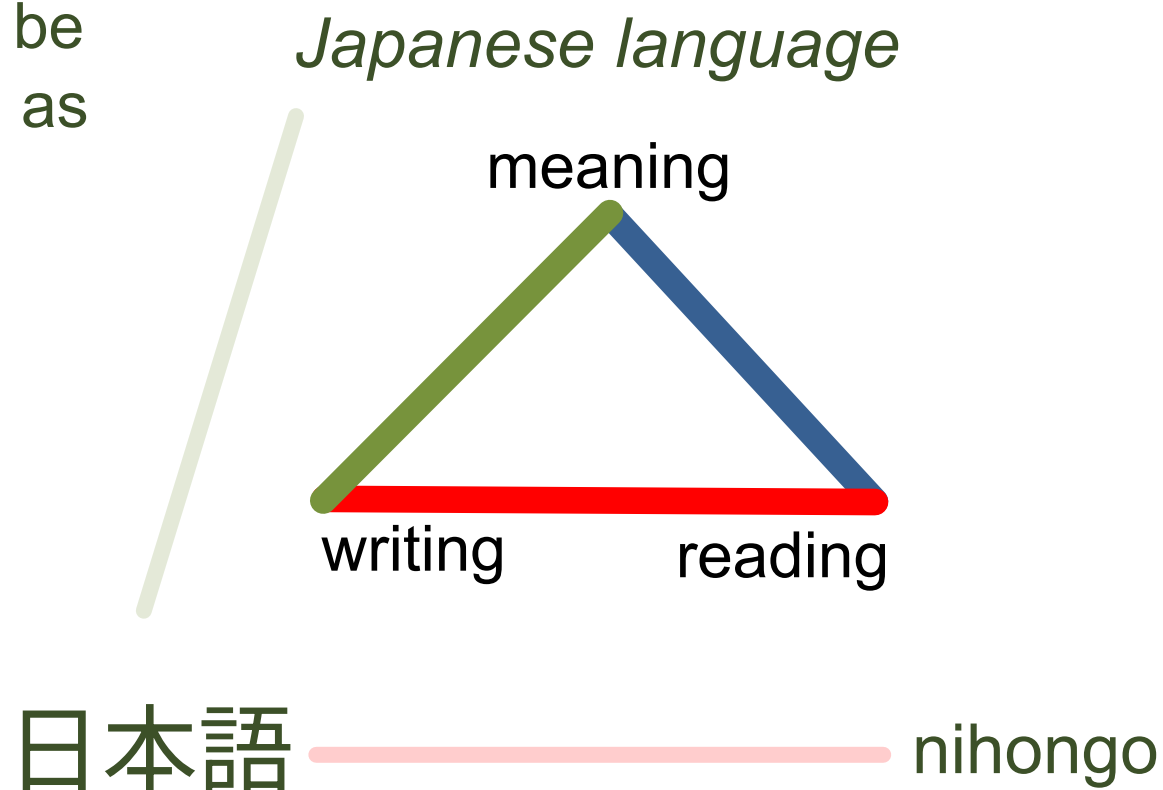
  * Outer connections represent base-word activation; inner connections represent rubi activation

In contexts, when a kanji-base might be unfamiliar, rubi annotations function as a supplement to activate the corresponding reading + meaning information.

Japanese language

meaning

writing   reading

日本語 ——————————— nihongo

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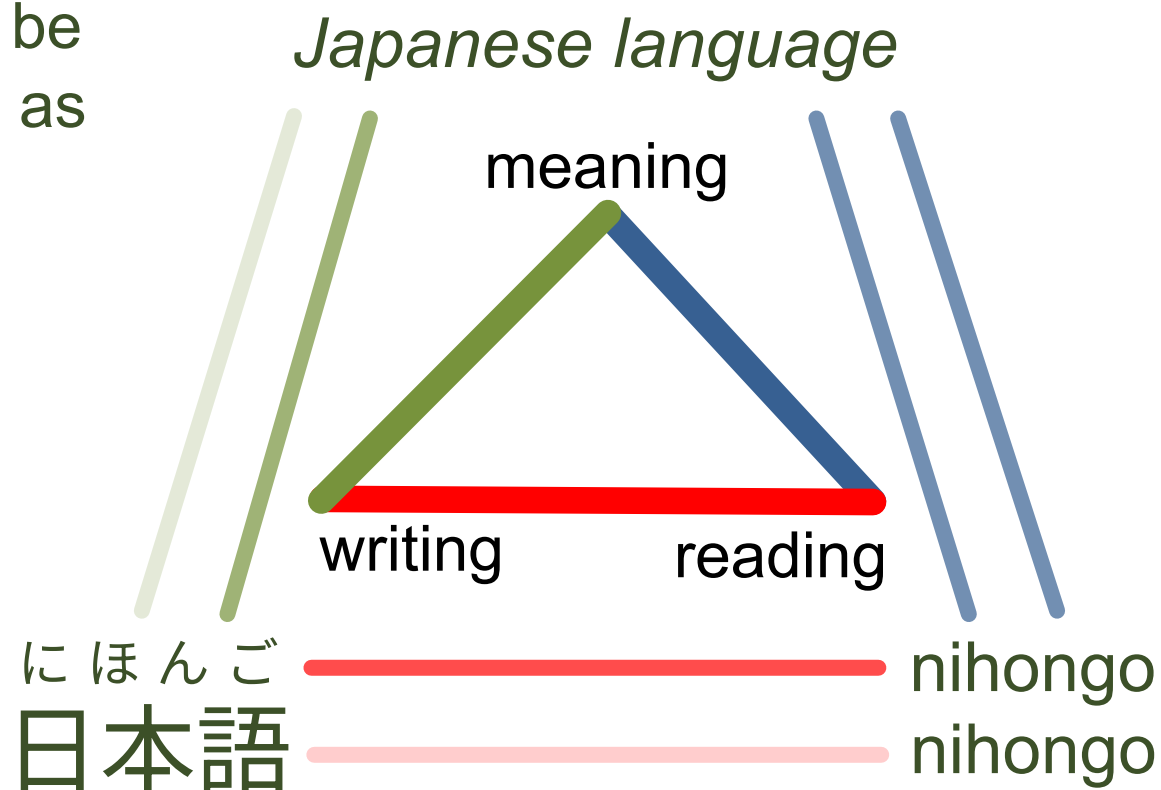
Japanese language

meaning

writing   reading

に ほ ん ご
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nihongo

Rubi functions also extend beyond the writing/reading interface to meaning.

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e.g., consider this clever name for an IT recruitment company; *Geekly*.

Rōmaji-base → modern [association + typographic play] but weak activates reading.

Katakana-rubi → reading, not meaning.

meaning

writing   reading

Geekly ————————— geekly

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meaning

writing   reading

ギークリー
Geekly ——————— gīkurī
        ——————— geekly

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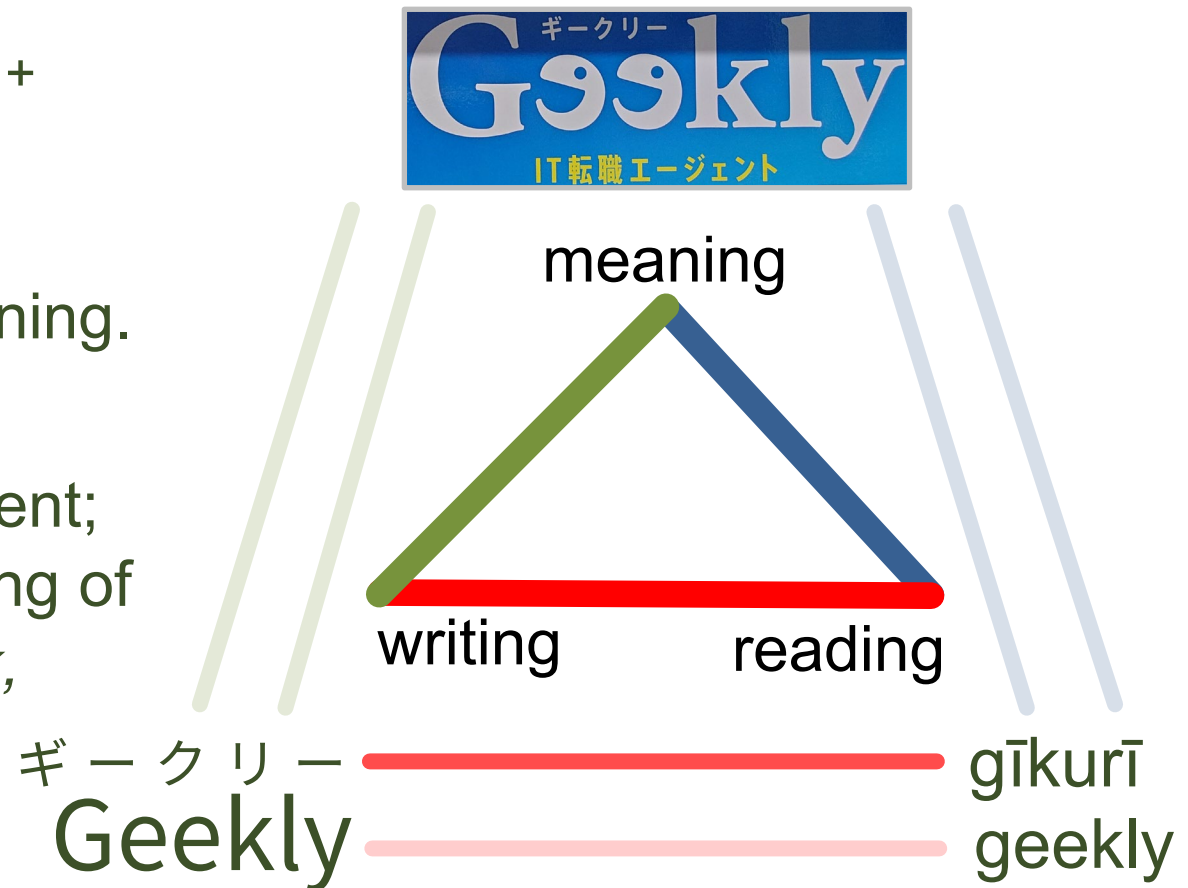
Katakana-rubi → reading, not meaning.

Indeed, interpreting this Japanese-coined 'English' is context dependent; esp. in its appropriating + subverting of the negative connotations of *Geek,* blended with adverbal *–ly*.

Rubi unions of 2 different words evoke even richer interfacing to meaning.

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e.g., consider first the interplay with these frequent synonymous pairs.

true; serious; earnest
[ambiguous spoken word]

meaning

writing   reading

マジ　　マジ　　マジ
本当・本気・真剣 —————— maji

—————— hontō; honki; shinken

Rubi unions of 2 different words evoke even richer interfacing to meaning.
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Katakana-rubi is an ambiguous spoken word. As it spans the meanings of the 3 kanji-bases, it is context dependent.

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meaning

writing   reading
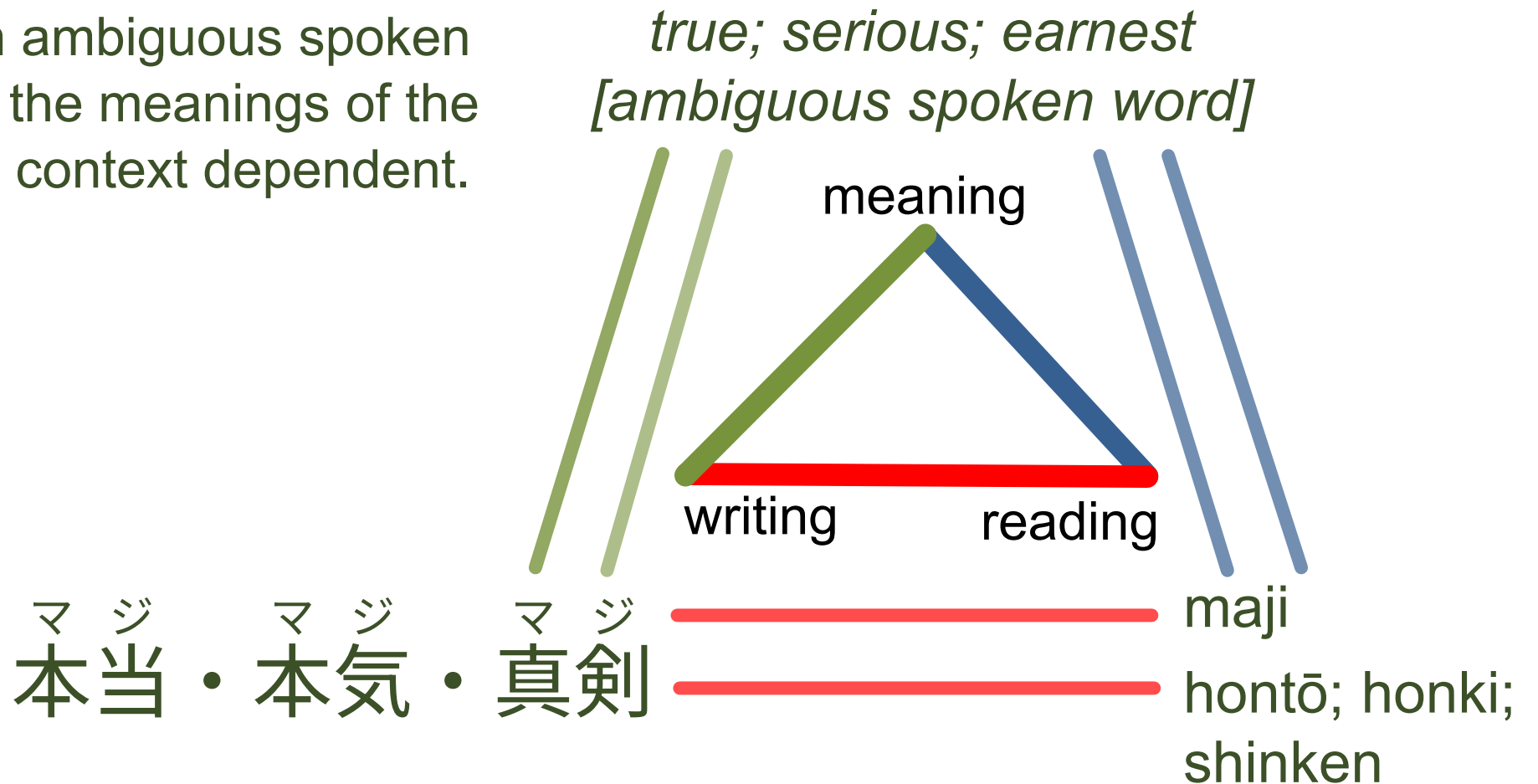
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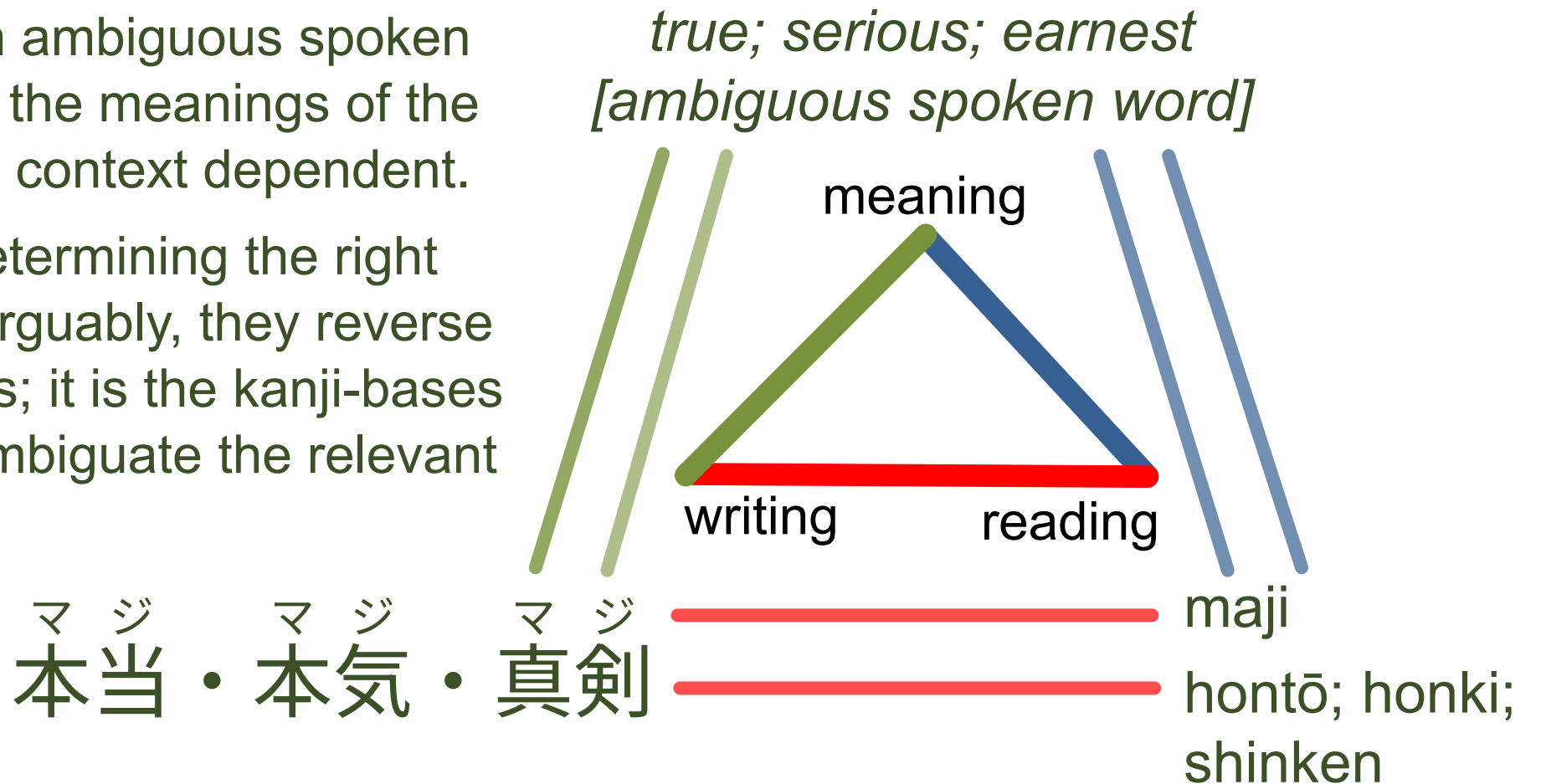
Posing issues of determining the right context register, arguably, they reverse the base-rubi roles; it is the kanji-bases that serve to disambiguate the relevant meaning.

true; serious; earnest
[ambiguous spoken word]

meaning

writing   reading

マジ　マジ　マジ
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Next, consider the highly potent fusing of meanings when unrelated words conjoin as base + rubi; cases that challenge our concepts of meaning.

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negotiation skills

In sufficiently literate readers, kanji-base
→ both readings + meanings equally.

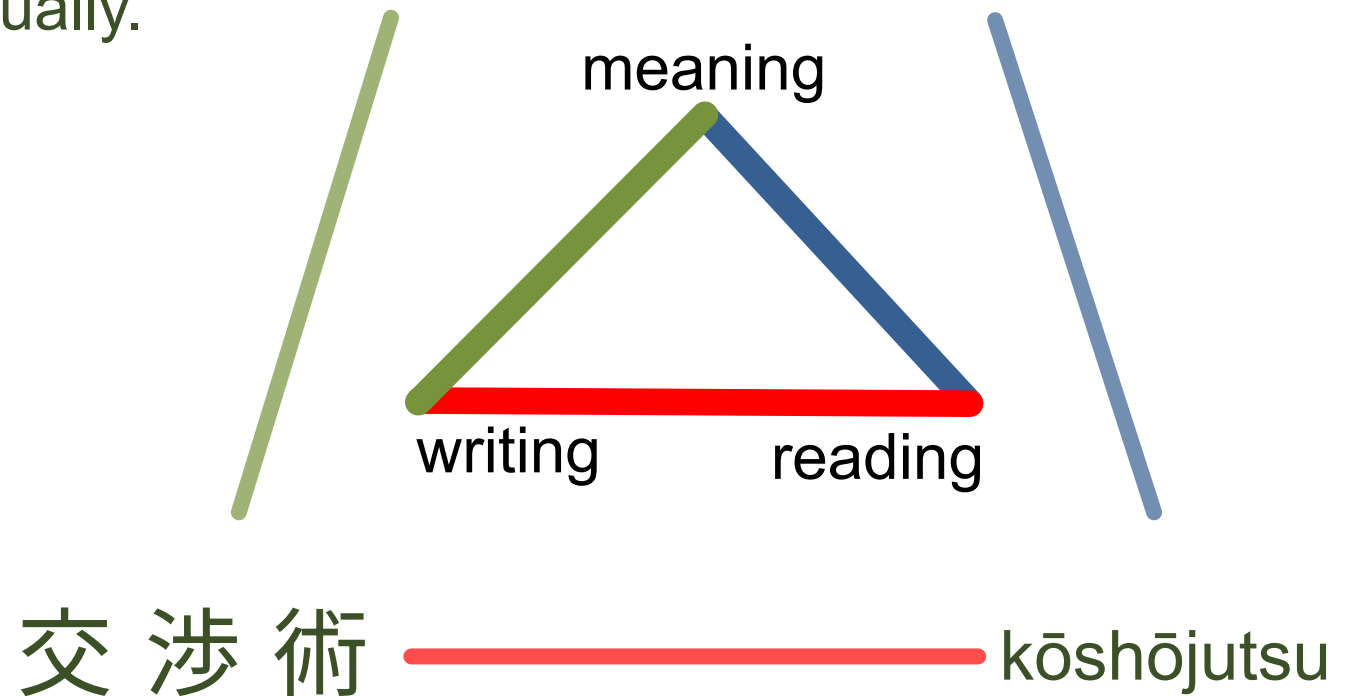meaning

writing   reading

交 渉 術 ————————————— kōshōjutsu

Next, consider the highly potent fusing of meanings when unrelated words conjoin as base + rubi; cases that challenge our concepts of meaning.

negotiation skills + *something quite special*

In sufficiently literate readers, kanji-base → both readings + meanings equally.

Similarly, hiragana-rubi also → both its reading + meaning.

meaning

writing   reading

あれだけのこと ——————— are dake no koto

交 渉 術 ——————— kōshōjutsu

Next, consider the highly potent fusing of meanings when unrelated words conjoin as base + rubi; cases that challenge our concepts of meaning.

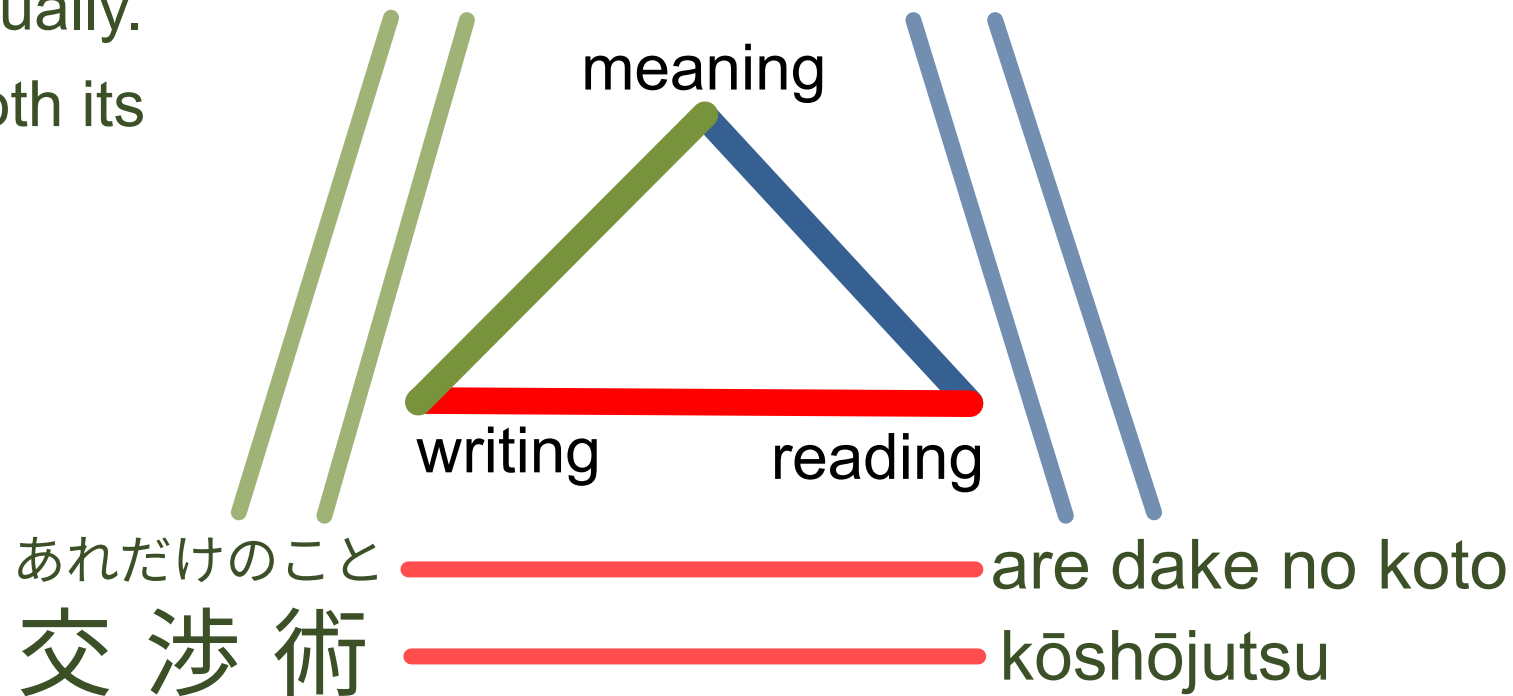In sufficiently literate readers, kanji-base → both readings + meanings equally.

Similarly, hiragana-rubi also → both its reading + meaning.

Reader's task is a highly sophisticated one of merging diverse meanings to comprehend a deeper semantic fusion.

negotiation skills + *something quite special*

→ *some quite special negotiation skills*

meaning

writing   reading

あれだけのこと ———————— are dake no koto

交 渉 術 ———————— kōshōjutsu

For secondary dimension of intentionality—a notion that Joyce and Masuda (2019: 248) advocate on "the assumption that written representations are always motivated to some degree"—a checklist approach is best suited to apprehend the mutual interactions between multiple attributes of 2 basic kinds.

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Materialization attributes
Base-rubi scripts
Script associations
Lexical strata
Base-rubi alignment
Typographic design
…

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Materialization attributes
Base-rubi scripts
Script associations
Lexical strata
Base-rubi alignment
Typographic design
…

Script	Common associations
Kanji	Chinese, Japanese, meaningful, hard, difficult, formal, learned, erudite, calligraphy, vigor, visual, masculine, adult
Hiragana	Japanese, soft, round, simple, lovely, informal, general, default, tender, feminine, young, child
Katakana	foreign, angular, hard, informal, scientific, pop culture, novel, modernity, futuristic, emphasis, neutral, young
Rōmaji	international, English, business, marketing, distinctive, public, prestige, scholarly, exotic, cool, young

(Joyce & Masuda, 2019: 265, Table 2

Another materialization attribute is base-rubi alignment, which also provoke different reactions.

With typographic design covering font contrasts and creative visual effects.

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With typographic design covering font contrasts and creative visual effects.

Materialization attributes
Base-rubi scripts
Script associations
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…

above

above
+
below
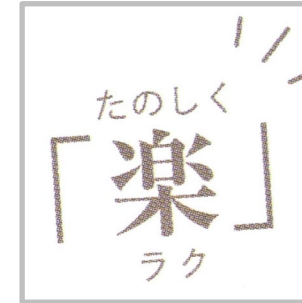
beside

embedded

overlaid

Functional attributes seek to explicate the sheer range of intentions that rubi annotations afford, frequently in various, mutually reinforcing ways.

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Functional attributes
Reading aids
Mnemonic devices
Emphasis
Explanation
Paraphrase
Register/ speech mode
Playfulness
Meaning finesse
Expressiveness
… …

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… …

in textbooks

石油などの資源を得るために,
（しげん）

for foreigners

つくば市役所の うけつけじかん
（しやくしょ）

for ordinary citizens… with unfamiliar terms, unusual names, name clarification …

「憲章」
（けん しょう）
を知っていますか？

東風小学校
（はるかぜ）

大山
（おお）（やま）

Rubi annotations often serve as mnemonic devises, usually with an element of playfulness. Accordingly, they are…

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… …

… widely used for company telephone numbers…

フリーダイヤル 0120 オ オ ク ミ ナ ヨ ム 09-3746

ヒ ロ イ ハ コ ナ ラ 0120-161857

やさしく よ み いい 0120(89)4311

ムシムシ 0120-18-6464

… and URLs in internet age …

ぶぶんきょうせい
https://bubunkyousei.com

Yet, it is more informative to appreciate how specific examples assimilate multiple functional attributes.

Functional attributes
Reading aids
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… …

L   Sukoshi Fushigi   *a little mysterious*

L   SF   *science fiction*

*Short SF collection → Short collection of **little mysteries***

A playful finessing of SF (science fiction) meaning serving as explanation and emphasis in an appropriate speech register for target younger-child readership!

Innovative potential of rubi is especially salient with semantic fusions; merging different words to finesse creative forms of expressiveness.

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… …

H   are dake no koto   *something quite special*

C   kōshōjutsu   *negotiation skills*

→ *It's going to require* **some quite special negotiation skills …**

Beyond emphasis + register functions, semantic fusions activate richer meaning information of separate words.

Having established a promising framework for interpreting rubi annotations, albeit, based on relatively limited, convenience sampling to date, we are continuing efforts to compile a corpus of rubi annotations that is more representative of contemporary applications of this creative graphematic convention.

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Prototypical furigana: Examples from instructional + public information contexts are numerous but only entail basic writing/reading interfacing;
Inherent emphasis factor: Primary motivation for creative examples is emphasis; a quality that relies on judicious usage for effect.

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Thus, focus now on systematic samplings of both advertisements (primarily train-flyers) + popular magazines (initially female + male fashion) over a 1-year period.

29 Closing remarks: Rubi definition revisited

Sought to highlight significance of rubi for the full triangle of writing/reading *and* meaning interfacing; a focus that deeply resonates with this deep insight about mapping symbols to meaning.

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Thus, we conclude by tendering a more apt definition of rubi;

Rubi denotes both the diverse materializations + the multifarious applications of a graphematic convention that is integral to the JWS's multiple scripts. Typically materialized by appending a different-script, marginal annotation to a base-word, rubi functions range far beyond mere pronunciation aids to finessing truly imaginative semantic fusions.

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Thank you for your kind attention

ご清聴ありがとうございます