

PART I | A GENERAL PLEA TO THE TECHNICAL DIRECTOR:

UNCOMPROMISINGLY PRIORITIZE THE TRANSLATOR'S WORKFLOW!

The would-be translator-annotator's dilemma

The linguist's dream:

Draw a large number of philologist's into a joint effort to generate a corpus of neatly annotated texts, producing a reliable thesaurus.

The translator's dilemma:

This is a treasure trove of materials! – However:

- 1. Are the trade-offs of learning the annotation system and painstaking coding of (for the most part actually simple-to-be-understood) sentences not too time-consuming?
- 2. Does this really suit my workflow?



之類亦如是。實無禽獸而有應禽獸。故經云 於花臺中久不出故言胎生。非實胎生。禽獸 應無胎生。而經言下聲受胎生者。此非胞胎。 人天別也。第五有胎生無胎生者。皆應化生

二智說教。菩薩今以權實顯正破邪。 明佛說二諦以表正道。今論以二諦爲宗推 進論文。此欲提綱振領揚略要旨。裕其玄莫 徒尋求易曉。二者在論初直爾散說大意。仍 論相資聯智傍正破申近遠。然後乃入論文。 條。一者有時明四論宗旨。釋中觀名題。解經 即世人云。數論前典。三論後出。欲示關河相 是斷常。擾於至道故。須廣破始得讀文也。六 功有在也。四者前明二智後入論文。明佛以 彰至其後發。三者先盛解二諦竟即釋論文。 佛藏等經。然後入論。欲明經論相成共顯一 傳師宗有在非今始搆也。七者或直唱無行 者前讀關河舊序。如影叡所作。所以然者。爲 簡二智也。五者彈碩古全破斥異部。所以然 師讀此論。遍數不同形勢非一。今略出十 欲明義有詮次文學渙然禀學門

內外並云。自是而非彼。美己而惡人。次內經 明破申大意。二者明四論宗旨義有同異。三 今時傳述鄭可一概。今就論初大爲五章。 論有多形勢者。略有三義。一者即法師善識 抽拙意何以加此。故直讀文也。法師所以講 菩薩。二者經論。三者破申。言佛與菩薩者。佛 答不出人法。人即是聖人。法名正法。若備法 滅邪見蟾然正法矩。問誰能破邪用何顯正 在初明其大意也。破申只是破邪顯正。即是 今時論意。善巧方便助佛揚化。方是破申。故 盡欲破他申己。旣出虛妄橫搆皆不成破申 破斥數經。以四諦命。重更顯斯實。如此之流 叙述外道所計云。是事實餘皆妄語。次成實 意者。無問內外學徒。凡有製作。皆辨破申。故 五者明論綠起。問答斷館、所以須辨破申大 者明經論能所諦智傍正。四者釋中觀論名 唯一種。三者龍樹提婆妙思深遠權巧萬端 人。則能破邪顯正。就此則有三雙。一者佛與 中道二智所說名經。菩薩以中道二慧所 名論。佛以中道二智所說名經。經即是教

此論出自菩薩中心精破妙解蘊在女內。 所明。是故斷常交興。生滅競起。邪言隱覆。正 果等有所言說。並出彼妄情所構。會非經論 或言異體。或言因中先有果。或言因中先無 等諸事義例皆然。故如他人。或謂真俗一體。本。旣不誠非真俗本。故不誠真俗之末,因果 就具俗以解具俗。不知用非具非俗以解真 求真俗之實。不知就非真非俗以求真俗。還 住真俗。不知本於不眞不俗。故還就眞俗以 代。鉞根薄福。尋教失旨。不知佛意。故論初 得是菩薩道。問旣破有得申無得。亦應但破 等非菩薩道。佛答云。有所得非菩薩道。無所 正。答羽旣無量。正亦多途。大略爲言不出二 也。問若箇是邪而言破邪。何者是正而噵申 門。折彼斷常。周還不二。破申之義。大略如此 教不申。所以龍樹菩薩。府兹弱喪。顯八不教 俗。還就末中。求末。不知就本求末。本是末 爾而無。此即佛說教爲緣之意也。但教流末 須申。故大品經善吉致問。何等是菩薩道。

磷中自復有異。若是龍樹。作論前破法。後垂 諦赴緣。菩薩直助佛揚化無別制作也。就菩 顯正故同也。言佛菩薩異者。佛即說教樹二 同異。佛菩薩具足不具足勝劣故異。皆破邪 不異。此是同異不同不異。既得不同異即 是同爲當有異。答一往且拆彼疑則云不同 與龍樹提婆也。問此之四人破邪顯正。爲當 主。其餘三聖。助佛宣揚。三者所謂馬鳴開士 大格爲論。不出四人。一是調御世尊。是能化 是佛與菩薩。今問。爱及正化迄。平像法。 **母紹機其人不少。今定取何人破邪顯正。答** 以兩破。亦性有假有皆是有。亦須二除也。 言因邪有正。只令邪者正。若言只因邪故正。 諦。以世諦有故不斷。眞諦無故不常。今彼斷 明申大小。即立中論破執真俗緣。可顯真俗。 遠。非一家意。今明。道非邪正。能體道之緣 知。邪正寧可碩異耶。今若禧邪言隱覆正教 正者。水火相害。何不破水顯火。而不爾。故 又不應言破除邪顯正也。又問。邪正一故言 正。此兩言似如乖反。若言破邪顯正。即不應 或言豈離邪有正。即撥邪者令正。因邪故得 常見息。是故須說二諦也。問或言破邪顯正 流皆歸大海。凡欲悟入。莫不因此教門。論旣 止故。破邪顯正也。難。若邪正相違故破邪顯 相障法故。不破瓶顯衣。邪正是相障法。邪障 異。破瓶顯衣耶。彼云。瓶衣乃異不相違害。非 **破邪顯正。爲邪正異故破邪顯正。他人解。邪** 兩端。破除邪故得顯正也。難。若爾瓶衣體

立。所以然者。論主出世。唯爲破顚倒斷常。更 汝亦計有人法亦是外道。今論不爾。唯破不 十六諦。此亦有過。彼計有人有法旣成外道。 亦不可失。若言外道二十五諦爲非。汝四 破外道二十五諦而立四諦十六

Around the turn of the millennium: The joys of a spare copy ..., augmented by notes on paper, and a simple translation file on the computer.

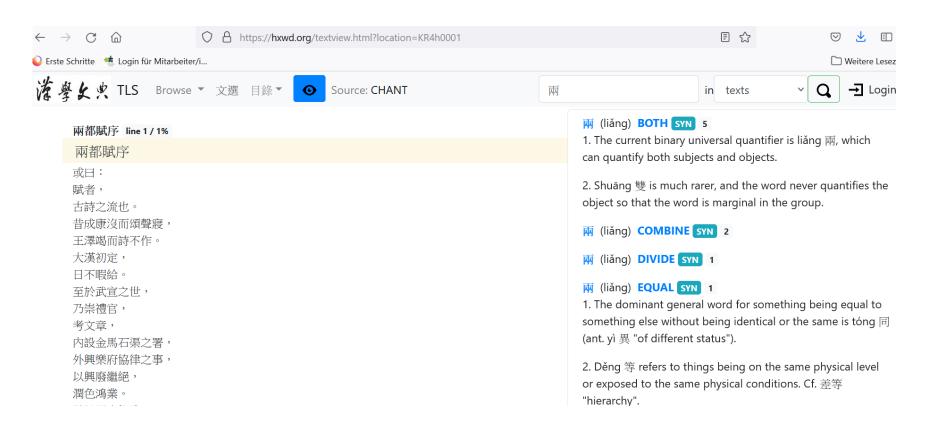
與論主。雖同照照亦不同。答云實爾。佛照大

不申。答旣有一問一難。今亦一答一解。先答荷欲爲異者。他論可得有破申。今論應唯破 有破有申。今他二論。竟有何異乎。又難。若使 明。論主照小晦也。問他論有破有申。今論亦 破邪。破邪令識佛教也。問雖同威威不同。佛 佛說二諦教。龍樹雖爲鳳綠所鳳。但咸龍樹 不例者。雖同感而感不同。佛爲感緣所威。威 問。若爾佛說教。龍樹亦應說教不。答應例而

。他論有破而復更立。今論唯破而不立。言 一問。上問。俱有破申。今他二論何異。今

如破外道神我而更立假





... A cutting edge translation platform,



Some very general notes on the translation workflow:

- 1. Establishing the source text depends on understanding (i.e.: translating) the meanings of the facsimiles. Thus, one's eyes constantly oscillate between
 - a) the facsimile(s),
 - b) the source text in the process of being established, and
 - c) the emerging translation.
- 2. As discussed before, most users probably would like to divide the text in paragraphs corresponding to sense units, and not into lines.
- 3. During this process, one usually would constantly add footnotes (including interim notes on unresolved issues and things still to be taken care of)
 - both to the edition and to the translation.



| 大朱四論大意記卷第一 大朱四論大意記卷第一 大和章有提揮經論始終大意與片古今假論等有得 大和章有提揮經論始終大意與片古今假論等有得 大和章有提揮經論始終大意與片古今假論等有得 之思與於論文第二月他對得无清理以外殊也 之思是限於論文第二月他對得无清理以外殊也 之思是限於論文第二月他對得无清理以外殊也 之也是限於論文第二月他對得无清理以外殊也 之也是限於論文第一世論文四十餘遍常觀大東戰 和則見和章中假語性代於承也守之得遍真有 和則見和章中假語性代於承也守之得遍真有 和則見和章中假語性大派或也守之得遍真有 和則見和章中假語性大派或也守之得遍真有 和則見和章中假語性大派或也守之得遍真有 和則見和章中假語性大派或也守之得遍真有 和則見和章中假語性大派或也守之得遍真有 和則見和章中假語性大派或也守之得過更有 和則見和章中假語性大派或也守之時。 本語學 本語學 本語學 本語學 本語學 本語學 本語學 本語學 | p. 01a大乘四論玄義記卷第一 | The Dark meaning of the Four treatises [belonging to] the Great vehicle, role no. 1 | | | 中假 (zhong1jia3) MC _{BS} (trjuwng+kaeX) |
|--|--|--|---|--|---|
| | 均正撰記 | compiled and recorded by Director Kyun 均正 ¹ | the middle and provisional , | 1 Short for [Hye']gyun [Sǔng] jǒng 慧均僧正, 'Director of monks Hye'gyun.' | the middle and provisional, |
| | 初章中假義 | The meaning of the 'middle and provisional of the 'First stanza" | | | technical term of Sanlun Buddh., denoting the absolute and the penomenal. |
| | 初章中假義有八重 第一明初章 第二論中假 第三辨疎密 第四明橫竪 第五論單複 第六辨雙隻 第七明通別 第八夷諸法 | "The meaning of the 'middle and provisional of the 'First stanza" has eight levels: First, illumination of the "First stanza"; second, discourse on the middle and the provisional; third, differentiation of "open" and "secret"; fourth, illumination of "horizontal" and "vertical"; fifth, discourse on "simple" and "complex"; sixth, differentiation of "pairwise" and "single"; seventh, illumination of "pervasive" and "separate"; eigth, tearing down the [diverse] dharmas. | | ¹ TBA | |
| | 第一明初章 夫初章者 摠撮經論始終大意 彈斥古今成毗地攝論等有得之 失 顯三 ¹ 論无得大乘之得也 判得无得理內外殊也 若成論等師 見聞初章中假語 必不解意是何物語 致笑之也 | First, illumination of the "First stanza": Now, the "First stanza" comprehensively extracts the overall intention of the anterior and posterior [as constituted by] warps and treatises, reproaches the fault of having something to obtain [committed by] the <i>Ch'eng-lun</i> [adherents] of past and present, manifests the obtainment of the Great Vehicle where there is nothing to obtain [as advocated by] the Three Treatises, judges on the differences between obtaining and nothing to obtain, or inside and outside of the [underlying] pattern [of reality]. When the <i>Ch'eng-lun</i> masters etc. see or hear the word of the 'middle and provisional of the 'First stanza", by necessity they do not understand what thing his word stands for, to the extent that they la igh about it. | The scribes' correction of 'Three' to 'Four' is based on a misreading of the title. | ↑ | |
| [Optional] facsimile(s) | source text transla | tion/analysis (switchable) so | ource notes | transl. not | es information |
| | | | | | |

One of many possible imaginations of a (reasonably implementable*) interface allowing to keep and eye on facsimile(s), source and translation

RUHR UNIVERSITÄT BOCHUM



PART II | A PERSONAL AGENDA RELATED TO TEXT SEARCH

Traditional scholarship at its best: FUKUSHI Jinin (2011, 2012a, 2012b, 2013)

第2章 日本華厳宗にみられる海東仏教認識(福士 慈稔)

第3章 日本華厳宗章疏にみられる海東仏教章疏(福士 慈稔・金 炳坤)

第2章 日本華厳宗にみられる海東仏教認識

福士慈稔

本章は、日本華厳宗諸師章疏類に引かれる海東章疏及び海東諸師名の引用整理から日本華厳宗 諸師の海東仏教認識を窺うことを目的とする。31 師 94 部の意疏類を対象として整理を行った結 果, 23 師 54 部の章硫類に海東章硫及び海東諸師名の引用が確認された。引用が確認される海東 章疏及び海東諸師名は以下の通りである(1).

- 1. 寿霊 (-757-791-)
- 1. 『華厳五教章指事』
- 1. 印師 名1
- 2. 円測 引用7-不明2(散逸『成唯識論疏』カ)・『解深密経疏』2(慧苑『続華厳経略 疏刊定記』からの孫引き1)・『仁王経疏』3
- 3. 元暁 引用 25-不明 9 (散逸『華厳経疏』又は『華厳宗要』・散逸『仁王経疏』・散逸 『楞伽経疏』関係章疏カ)・散逸『楞伽宗要』1・散逸部分『菩薩瓔珞本業経疏』 1・『法華宗要』8・『大乗起信論別記』4・『起信論疏』1・『二障義』1
- 4. 憬興 引用5-散逸『瑜伽論抄』カ(遁倫『瑜伽論記』からの孫引きカ),書名1(散 挽『瑜伽論抄』カ)
- 5. 玄一 引用 2-散逸『法華経疏』
- 6. 義寂 引用 2-不明 (散逸『法華疏』 n), 書名 1 (不明·散逸『大乘法苑義林広章』
- 7. 義一 引用 2-不明(散逸部分『法華経論述記』カ)
- 8. 太賢 引用1-不明(散逸『涅槃経古迹記』カ),名1
- 9. 表員 引用 1-『華厳経文義要決問答』
- 2. 普機[/幾] (-830-)
- 1. 『華厳宗一乗開心論』
 - 1. 円測 名1 (慧苑『続華厳経略疏刊定記』からの孫引き)
- 2. 審祥 名1
- 3. 增春 (-947-956-)
- 1. 『華厳一乗義私記』
- 1. 元暁 引用2-『法華宗要』(寿霊『華厳五教章指事』からの孫引き)
- 2. 智通 引用1-『華厳経問答』
- 3. 珍嵩 引用1-不明 (『一乗法界図記』又は散逸『探玄記私記』・『華厳孔目記』カ)

Onerous text-by-text Identification of text re-use ...

... vet based on **open**

which have rarely gone by

unmentioned in secondary

citations only!

literature!

4. 言示眞實相者。元曉師云。此示亦二。先明所示。次明能示。所示之眞實相。 謂一乘人法。法相常住道理究竟。天魔外道。所不能破。三世諸佛。所不能 易。以是義故。名眞實相。而非三非一。無人無法。都無所得。如是正觀。 乃名眞實究竟一乘云云(206下-207上)【引用1(『法華宗要』)】 [元暁『法華宗要』(『大正』34,872 下-873 上[金 3-5,3-6])]

無記名引用 5. 能示之用。有其二種。一者同開之示如前。開三是方便時。即知一乘是眞實。 故如開門時即見內物。二者異開之示。異前開三別說一乘聞。是皆得悟一乘 義。故如以手指方見內物。如下文言。諸佛唯以一大事因緣故。出現於世。 如是等。言眞實相也(207上)【引用1(『法華宗要』)】

[元暁『法華宗要』(『大正』34,873 上[金3-8])]

問。若說三乘因果皆是方便故歸一乘者。爲歸一因。爲歸一果。元曉解云。 於一佛乘。分別說三。故隨其本歸因歸果。是義云何。聲聞緣覺。若智若斷。 皆是菩薩無生法忍。當知。此二皆歸一因。歸一因故。終到一果。彼敎中。 說佛乘因果。分別佛地化身少分。如經說言。我實成佛以來。百千萬億那由 他劫。故當知。彼說佛乘因果。同歸於一乘果中。若有菩薩。依彼教故。望 樹下佛。發心修行。如是願行。歸於一因。同彼二乘。未至果故(208上) 【引用1(『法華宗要』)】

[元晓『法華宗要』(『大正』34,873 下[金 3-15])]

7. 問。上引元曉師說云。聲聞緣覺若因若果。皆於一因。分別爲二。當知。此 二皆歸一因。歸一因故。終到一果。彼教中說佛乘因果。分別佛地化身少分。 當知。彼說佛乘因果。同歸一乘果中。若有菩薩。依彼敎故。望樹下佛。發 心修行。如是願行。歸於一因。同彼二乘。未至果故(213下) 【引用1(『法華宗要』)】

要』(『大正』34,873 下[金3-15])]

無三之一。俱皆是佛乘故。共菩薩所乘故。非如二乘迥異乘 待週也。所望異故。不相違也 (215 下)

故。說一乘句耶。答。未知所以。然元曉師。楞伽宗要云。 中。言究竟者。是雖明修行地決定別趣。而望究竟地。終歸 一向趣寂二乘。約修行地。一向性別。決定趣入無餘依界。 令其入無餘成無上覺。而其後時。離醉得悟。修菩薩行。終 如下經言。說三乘者。爲發趣修行地故。說諸性差別。非 畢竟能取寂靜之地故。乃至見法無我。得三昧樂行故。聲聞 如來法身故。若准此說。第十究竟。非密義一乘。而爲顯了 答意。若依此說故。不說第十究竟一乘。或有云。是十義中。 比釋不安。 違問答故 (216 中下)【引用 1 (散逸『楞伽宗要』)】 境界者。此因陀羅微細境界門。此學喩況。顯法義分齊。下

云。體相自在。隱映互現。重重無盡。故元曉師云。如帝釋宮覆寶珠網。一 明珠内。萬像俱現。如一明珠。諸珠皆爾。斯則萬珠影像。皆入一珠。一珠 影像遍入萬珠。一切相入。不相障礙。普法亦爾。互爲鏡影。如微塵有明鏡 義。合明了性一心成。故十方世界。皆是影像。分别所依。現似有故。所以

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⁽¹⁾ 特に、智通が記録した『錐洞記』或いは『錐洞問答』の異本であることが明らかとなった、法蔵仮 託『華厳経問答』(金剛大学校仏教文化研究所編『華厳経問答をめぐる諸問題』図書出版 CIR, 2012 年8月)については金天鶴氏より資料を提供して頂いた。かかる詳細については本章の〈付録〉『華 厳経問答をめぐる諸問題』「はじめに」を参照されたい. 尚, 引用整理の確認にあたっては, 金炳 坤氏・桑名法晃氏に研究協力を得た. 記して感謝申し上げたい.

RESEARCH PROJECT I:

"Computer-assisted analyses of Buddhist *hanmun* texts from Silla and their impact on Tang dynasty Chinese Buddhism"

- 1. Identification of characteristics of different forms of text reuse
- 2. Development of algorithms and software tools for
 - identification of marked and unmarked text-reuse
 - extraction of basic information on valence
- 3. A preliminary survey on the influence of Silla Hwaŏm texts on Tang dynasty Buddhism (→ deconstruction of nation state narratives)

RESEARCH PROJECT II:

"Development of stylometric methods for the detection of text groups"

- 1. Contribution to the development of authorship / text group detection methods for *hanmun* through testing different stylometric measurements
- 2. A preliminary survey on the works ascribed to Wŏnhyo, identifying text groups



SUBPROJECT II: Computer-assisted analyses of Buddhist *hanmun* texts from Silla and their impact on Tang dynasty Chinese Buddhism



SELECT * FROM view_wspatterns

WHERE

patcnt > 0 AND element = 1 AND chrent > 4

AND basename = "Soled Queries",

filecnt >= 2

AND pattern IN (SELECT Pattern FROM view_wspatterns

WHERE basename = "T45n1877" OR basename = "T45n1876"

程度。一島後至住一枝上。枝觚即時為之而折。

一島後至住一枝上。枝觚即時為之而折。

Chengguan 澄觀 (738-839):

 第七因陀羅網境界門 如天帝殿珠網覆上
 明珠內 萬像俱現 播珠 虚然 又 互相現影 影復現影 重重無盡故 (7.1736.36.10b26-29)

如天帝殿珠網覆上
 東北野爾 此珠明徹 互相現影 影復現影 而無窮盡 (7.1735.35.515c01-03)

Wŏnhyo 元曉 (617-686):

如帝釋宮覆寶珠網 一明珠內 萬像俱現 如一明珠 選珠皆爾 斯則 萬珠影像 皆入一珠 一珠影像 遍入萬珠 一切相入不相障礙 普法亦爾 互為鏡影 (7.2337.72.226c23-c26)

Identification of different forms of text-reuse across a corpus (rarely occurring terms and phrases, collocation clusters, parallel passages)

Uncovering of hidden textual relations (macroscopic text comparisons, detailed alignments)



RESEARCH "Computer-assisted analyses of Buddhist *hanmun* texts from Silla and their impact on Tang dynasty Chinese Buddhism"

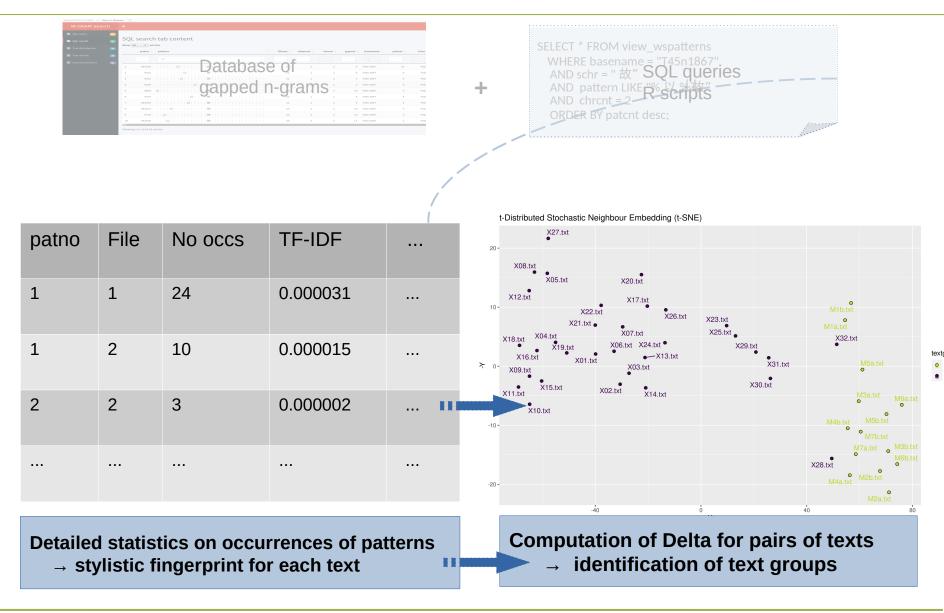
- 1. Identification of characteristics of different forms of text-reuse
- 2. Development of algorithms and software tools for
 - systematic identification of marked and unmarked text-reuse
 - extraction of basic information on their valence
- 3. A preliminary survey on the influence of Silla Hwaŏm texts on Tang dynasty Buddhism (→ deconstruction of nation state oriented discourses)

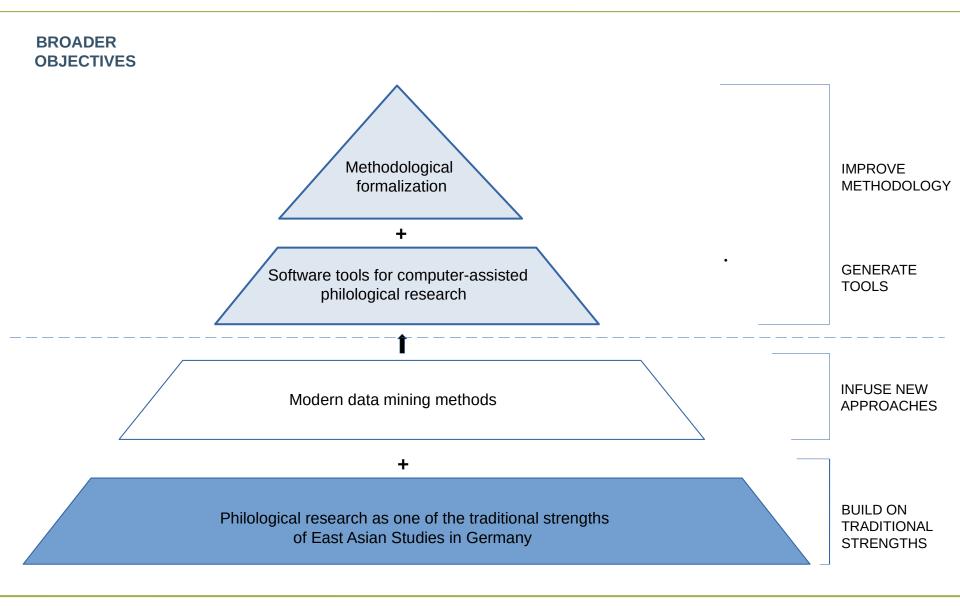
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SUBPROJECT II: Development of stylometric methods for the detection of text groups









PART III: SOME MORE DETAILS ON THE MNGRAM SOFTWARE

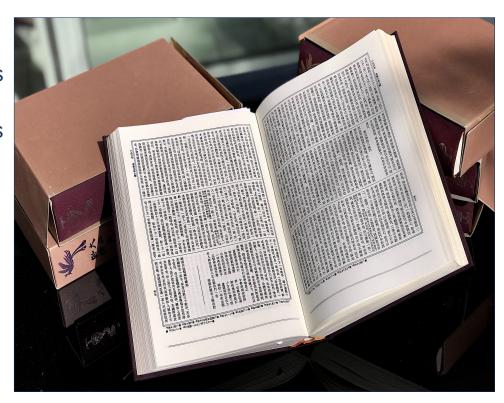
CONCRETE OBJECTS OF RESEARCH

Corpus

- ca. 155 texts related to Tang and Silla Huayan- / Hwaŏm-Buddhism (source: CBETA)
- Numerous persistingly wrong attributions
- Texts not sufficiently understood as to their (diachronic and translocal) relations
- → A bibliographic swamp distorting our outlook on the history of Huayan thought

Research interests:

- Intertextuality: identification of hidden quotations
- Problems of text criticism: identification of interpolations, comparison of textual parallels
- Autorship problems: identification and correction of wrong attributions
- → Rearrangement of source materials; Reconstruction of a transregional current of thought





Existing Solutions

Bioinformatics

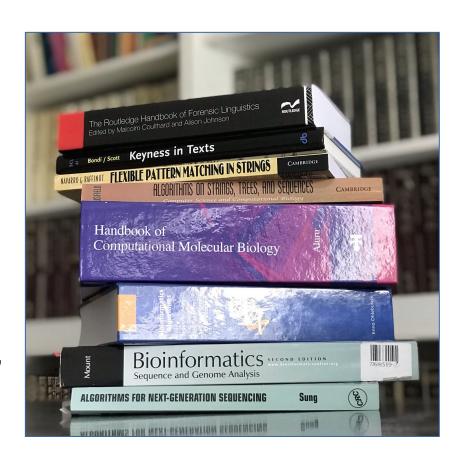
- Broad spectrum of methods for sequence comparisons
- Existing libraries for the most part optimized for small alphabets (DNA)

Corpus linguistics

- Diverse software packages and libraries (e.g. Wordsmith, Stylo) for NGRAM based statistics (including collocations)
- Only partially suitable for CJK, limited text comparison functionality

Buddhological research

- NGRAM based and similar approaches (Moro, Ishii, Bingenheimer, Radich; Nehrdich); text comparisons (Radich)
- Script based; limited use of bioinformatics libraries (cf. M. Radich's TACL)
- Rather conventional approaches with little adaptations for CJK texts









DESIDERATA ...

Enhanced functionality

- Complex searches
 - Search also for gapped n-grams rather than simple n-grams only (→ fingerprinting)
 - Automatic extraction of reoccurring patterns

Adaptation to object of research*

- CJK (UTF-8) compatability
- Later: Integration of language and genre-specific linguistic and text-linguistic knowledge in search methods and statistical analyses (e.g., attention spans, citation conventions)

Efficiency

Analysis of large quantities of text in acceptable time

Extendability

Separation into program for database generation and queries, scripts for more complex statistical analysis (SQL and R), and graphics capable Web interface (Shiny/R)
COMPUTERGESTÜTZTE METHODEN IN DEN

use of standard interfaces





WHERE WE STAND: MNGRAM (Multiple N-GRAM)

- Corpus analysis and search program (written mainly in in C++)
 - Computes 32 chars long gapped n-grams and data on their frequencies
 - by comparing all slices of a text added to the database for partial matches, and
 - comparing the results with all existing database entries (→ successively generating new skip-grams)
 - Processes parametrized MYSQL queries, offering the user additional SQL functions (TF-IDF, positions in text, delta etc.)
- Database Backend: SQLite database

(on a i7-7820X CPU with AVX-512, NVIDIA[™] CUDA-capable GTX 1080 graphics card, the computation of a corpus of 155 texts takes 3 days)

- Existent rudimentary prototype of separately usable
 Interface (R / Shiny) waiting for someone's care
- Presently, only usable via command line interface and SQLite guery files
- Still in beta* phase, and a major extension still needs to be written

```
MNSegAligner
    // Inherits SufCmp from SuffArray
669
670
671@void MNSegAligner::segAlignFiles(co
672
       locale::global(locale("zh TW.u1
673
675
       ws1 = readFileIntoWstring( fn1
       ws2 = readFileIntoWstring( fn2
676
677
678
       createGeneralizedSuffixArray( v
679
680
681
           // Step 1: Get Matches that
682
           getSeedsFromAllCommonExtens
683
           // Now, all LCE >= 3 for ws
684
685
           // Step 2: We should now de
686
           mergeSeeds(3);
687
688
           // Step 3: Smith-Waterman
689
690
691
           // Output
692
693
           //printLongestCommonExtensi
694
```





WHERE WE STAND: MNGRAM

Two very simple sample queries (1/3)

Text comparison:

// Search for significant congruences among texts:

- Show all sequences with a length of more than four characters that occur in T45n1867 and T45n1877, but in no other text.*
 - * More than four characters in order to avoid as much as possible mere word congruencies

SELECT * FROM view_wspatterns WHERE patcnt > 0 AND element = 1 AND chrent > 4 AND basename = "T45n1867" AND filecnt = 2 AND pattern IN (SELECT pattern FROM view_wspatterns WHERE basename = "T45n1877") ORDER BY chrent;

Grammatical analysis:

// Search for constructions:

Show all constructions of the type yi 以 … gu 故 in T45n1867, ordered by number of occurrences in the text.

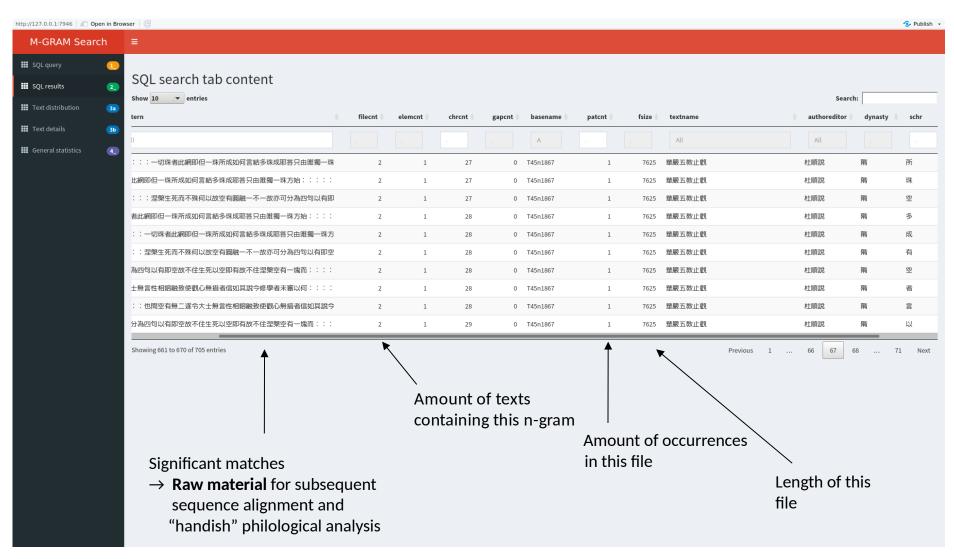
SELECT * FROM view_wspatterns WHERE basename = "T45n1867" AND schr = " 故 " AND pattern LIKE "% 以 % 故 %" AND chrcnt = 2 ORDER BY patcnt desc;

(Such standard queries later will be hidden for the casual user, who will only use the shiny (text/pun re-use intended) user interface)





WHERE WE STAND: MNGRAM Two very simple sample queries (2/3)

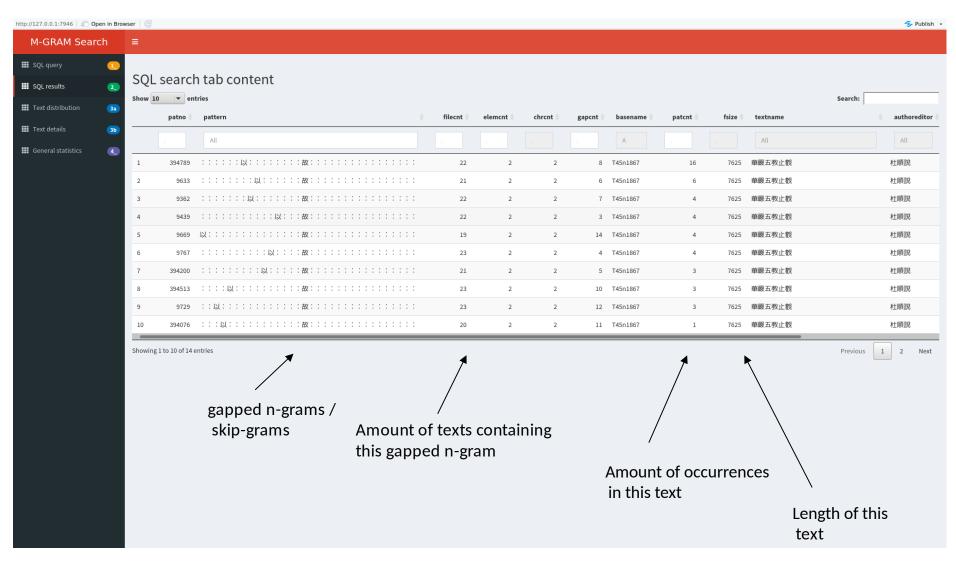


COMPUTERGESTÜTZTE METHODEN IN DEN OSTASIENWISSENSCHAFTEN.





WHERE WE STAND: MNGRAM Two very simple sample queries (2/3)



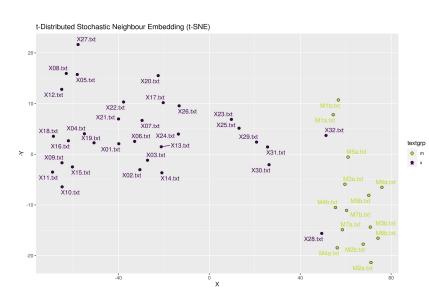
(For Christoph ...) COMPUTERGESTÜTZTE METHODEN IN DEN OSTASIENWISSENSCHAFTEN.





WHERE WE STAND: MNGRAM

What we can already do with somewhat more complex scripts (1/1)

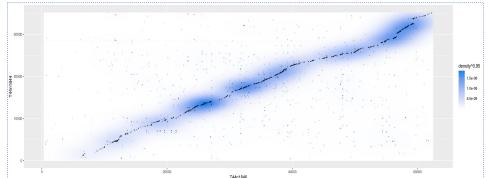


A chart displaying *Xunzi* 荀子 and *Mengzi* 孟子 chapters clustered by delta values*

* As far as I remember, this particular one was based on 2-grams containing chars normally used as *xuzi* 虚字

Another chart displaying the densities of textual overlaps between two commentaries by Wŏnhyo 元曉 and Fazang 法藏

x-axis: T.1846 y-axis: T.1844

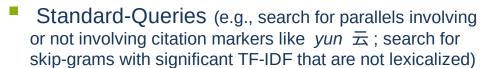




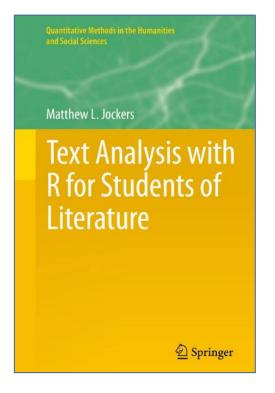
To be implemented in future ...

Stepwise extension of web interface with standard functions(mainly SQL + R)

- TF-IDF (measure already implemented)
- KWIC
- Collocations
- Dispersion plots



• ..



(praxistaugliche Einführung mit leicht adaptierbaren code snippets)







SOON TO COME ...

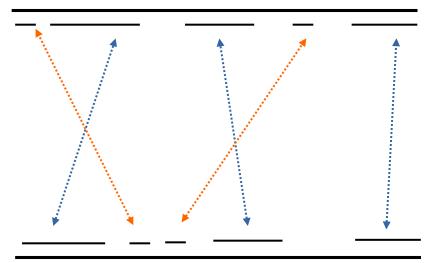
Implementation of a module for Sequence alignments between two given texts

 Goal: Identification of <u>all</u> common Subsequences, accounting not only for contractions and extensions, but also for permutations

(naive Implementations based on von Smith-Waterman / Levenshtein / Gotoh do not suffice)

- Graph based algorithm, partially inspired by CHAOS-DIALIGN:
 - First identification of "interessting" text passages (here: 3-grams)
 - Then alignment of surroundings similar to DIALIGN (evaluation at the end)

String₁



String₂

- Matches between elements of the longest common subsequence
- Further matches: elements of another sub sequence







PART IV: TEXT SEARCH AND WORKFLOW,
OR WHY THIS MIGHT BE OF RELEVANCE
FOR THE TLS

An old foe [not only] of mine ...

```
遊塵生典 TLS Browse ▼ Documentation ▼ Links ▼
     Searching in dictionary for 即
    Found 34 matches
     Taxonomy of meanings: IP Phonetic profile: IP
      字書: 即 詞典: 即 漢リポ: 即
        • 即 (jí) APPROACH SYN 2
        • 即 (jí) ASCEND SYN 1
        • 即 (jí) BECAUSE SYN 1
        • 即合所問 (jí hé suǒ wèn) CONFORM SYN 1
        • 即 (jí) COPULA SYN 3
       • 即為 (jí wéi) COPULA SYN 1
        • 即是 (jí shì) COPULA SYN 1
        • 即世 (jí shì) DIE SYN 1
        • 即 (jí) EVEN SYN 1
        • 即是 (jí shì) EVEN SYN 1
        • 即 (jí) EVEN IF SYN 1
```

即 (jí) GO TO SYN 3
 即使 (jí shì) IF SYN 1
 即 (jí) IF

即立 (jí lì) IMMEDIATELY SYN 1
登即 (dēng jí) IMMEDIATELY SYN 1

• 即然 (jí rán) IMMEDIATELY SYN 1

即時 (jí shí) IMMEDIATELY SYN 1
即 (jí) IMMEDIATELY SYN 1

即位 (jí wèi) INSTALL SYN 2
即 (jí) NONETHELESS 1
即今 (jí jīn) NOW SYN 1

• 即時 (jí shí) NOW SYN 1

即須 (jí xū) SHOULD SYN 1
 時即 (shí jí) THEN SYN 1

• 尋即 (xún jí) THEN SYN 2

即得 (jí dé) THEN SYN 1
即 (jí) THEN SYN 3
因即 (yīn jí) THEREFORE 1
即便 (jí biàn) THEREUPON SYN 2
即 (jí) THEREUPON SYN 2

• 即時 (jí shí) THEREUPON SYN 1

即天 (jí tiān) TOMORROW SYN 1
 即心即佛 (jí xīn jí fó) ZEN PHRASES 1

Which of these many meanings are likely to occur?

Depends on specific idiom of text genre and idiosyncrasies of author

oends of m of tex idiosyn uthor where univers BOCHUM



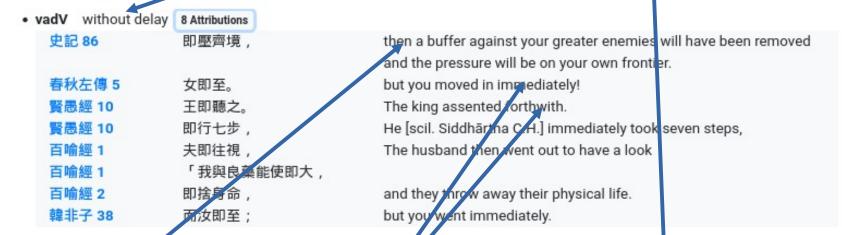


This is a synonym. – What are the closest equivalents we can use to render the word?



Jí 即 is a rather colourless word referring to action being performed without delay after another action.

Show references



At first confusing: Difference to entry "then"

At least at first glance, a matter of belief: 'immediately' or 'then'?

possibly too narrow: logical 'immediately'?



• vt+N copula be none other than N(PRED) 5 Attributions

即 jí OC: tsug MC: tsik 9 Attributions

(Is this *really* the case? What about cooccurrences of *xiangru* 相入, *xiangji* 相即 and *xiangshi* 相是)?

Show references

• vt{COP}+N1.vt{COP}+N2 emphatic 识+N1+即+N2: it is N1 which is N2 > the very N1 is N2, N1 is identical with N2 3 Attributions

vt+N copula be, be like 3 Attributions

是。』

• vtoN identical to be none other than 即+NP+是 3 Attributions

臨濟録 1 ー即三、ニ即一 , one in three, three in one. 祖堂集 3 即吾身是 」 that's who I am."37

祖堂集 5 『即祇對和尚言語者 'It is exactly the phrase which I gave as an answer to the master.'

Again, a matter of belief: Is this definitely still a verb?

(in the first case, the copula could be implicit)

Is the adverbative really only brought about by the translation? (cf. English: "Precisely this aspect ...")



• vt+N copula be none other than N(PRED) 5 Attributions

即 jí OC: tsug MC: tsik 9 Attributions

Show references

- vt{COP}+N1.vt{COP}+N2 emphatic 即+N1+即+N2: it is N1 which is N2 > the very N1 is N2, N1 is identical with N2
 3 Attributions
- vt+N copula be, be like 3 Attributions
- vtoN identical to be none other than 即+NP+是 3 Attributions

即是 jí shì OC: tswg glje? MC: tsɨk dʑiɛ 9 Attributions

• VPt+N copula emphatic copula construction: be exactly the same as, identical with 9 Attributions

```
祖堂集3
                 即是常定
                                           then this is 'permanent concentration (samādhi)'
祖堂集
                 即是修行
                                           and this is the same as practice;
六祖壇鄉 1
                 心即是地
                                           Mind is the ground;
六祖壇 學 1
                                           self-nature is the king.
六祖增經1
                  感悲即是觀音,
                                           Compassion is Avalokiteśvara;
六祖壩經 1
                 虚妄即是鬼神
                                           delusions are supernatural demons,
六祖詹經 1
                 三毒即是地獄,
                                           the three poisons are hell;
                 愚癡即是畜生,
                                           ignorance forms the realm of beasts,
                 即是西方。」
                                           this then is the Western Land."
```

Perplexing: 1. Vpt+N or vAdv + Vpt+N?

2. Does *ji* really mean 'identical,' 'exactly' or, rather, 'immediately'?



Pedestrian insight of the 'case study:'

Consulting a thesaurus at times may raise more questions than it helps to answer. ...

... and two questions concerning our workflow:

- 1. Do we really first want to labor to understand the other translators and painstakingly figure out whether they are being extremely precise or just erratic?
- 1. Is it actually the natural approach to first consult the dictionary when we run into difficulties with a certain phrase in a given text?*



^{*} Needless to say, this does not apply to the 80% of intellectually less challenging instances when we are looking up the meaning of a character the tenth time because again because we have forgotten the meaning due to our chronic dementia, or otherwise once more wonder about our hopeless lack of erudition.

Normally, such problems would rather take us to places like this:



(KWIC list of cbetaonline.dila.edu.tw)



Desiderata (I)

There is already a quite functionable full text search engine in the TLS. However, It might become even more helpful if

- 1. the translator could mark a given phrase in the source text (i.e., not only a lexicalized word!), press a certain key or button and were shown a popup similar to the one appearing when you click on a certain word in the source text, but now showing a kwic list.
- 2. the search would default to the text at hand (because already for methodological reasons, in most cases we would first focus on the actual usage habits of our authors/editors, and only with growing dispair would turn to the textual universe and the dictionaries.)
- 3. the search engine would allow for more complicated grammatical structures, i.e. gapped n-grams (e.g., 為…故) to be searched for.*
- * In addition, one might also think about an additional search popup that allows to enter formulae based on Christoph's notation, such as '為 + N'.



Desiderata (II)

On the long-term, it would be desirable if

- 1. the translator could also mark a set of terms in the source text and by pressing a certain key or button could trigger a full text search for passages containing these words in a given proximity to each other.
- 2. the translator could mark a whole passage and trigger a popup that would allow for a non-heuristic search for any similar passages in a specific domain (or sub-domain) of texts, thus at a glance being able to discern hidden quotations or other cases of text reuse.*



^{*} This sounds more futuristic than it actually is.



THANK YOU FOR YOUR PATIENCE!