Does Japanese have an Austronesian stratum?

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Some years ago I began to investigate the question of whether contact between Indonesia and Japan in the late prehistoric period was more important than has previously been realised. This was based on a perception of shared cultural and technological elements. Since these seemed to imply a relatively advanced civilisation, it seemed to me that the most likely time for this contact to have taken place was the Yayoi period (second half of first millenium B.C. to early first millenium A.D.), a period when significant innovations were made in agriculture, pottery and metalwork, and social organisation. This investigation I began used both physical evidence and cultural evidence, which seemed to fit together in a remarkable way. This was so for rice, where the genetic relationship between Japanese and Javanese rice was paralleled by the uncanny similarity of religious beliefs and royal ceremonies, and by correspondences in vocabulary items related to rice. It was also the case for weapons, where the correspondence in technique of production and in form is matched by a near identity in the ritual involved in the production and use of weapons and in the myths attached to them. Yayoi pottery and the *dotaku* also proved to have strong typological similarities in form and decoration with Javanese pottery and metalwork. My question was, did this indicate Indonesian influence?

I next turned to the ethno-historical field, and found that dental and cranial studies carried out by Japanese and non-Japanese researchers seemed to indicate that the Yayoi population had markedly Indonesian characteristics according to a number of indicators. One of the problems in Japanese ethno-history, however, is that studies of the human remains from the Jomon period, which preceded the Yayoi, revealed marked affinities with early Southeast Asian — indeed specifically Indonesian/Malayan — populations[1], and this fact is often used to explain any Southeast Asian characteristics in the modern Japanese population. In my opinion, this has tended to mask or discount the possiblity of a later Southeast Asian element coming in during the Yayoi period. It is currently accepted that there was significant migration into Japan during the Yayoi period (after an earlier consensus of opinion that the Yayoi civilisation was an internal development from the Jomon) — but the most favoured source of this migration is Korea. Yet there seems to me no reason why Korea and Southeast Asia should necessarily be considered mutually exclusive sources, and indeed Dodo and Ishida's cranioscopic

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1 See e.g. the work of Horai et al.who extracted mtDNA from an ancient Jomonese bone the age of which is estimated at 6, 000 years B.P.. Complete sequence identity was found with two contemporary samples from Indonesia and Malaya respectively

studies[2] also make the point that the Yayoi period may have been one when a number of different populations were competing with each other for their gene dispersion.
While conducting this investigation I realised that any contact situation of sufficient intensity to bring about these innovations must have left its mark in the language. Thus I unexpectedly developed an interest in the Japanese language and its affiliations, which led me to read the works of such linguists as Miller, Murayama Shichiro, Matsumoto, Sakiyama, Shibatani, Benedict, Kawamoto and Vovin[3]. Most of these works deal principally with the genetic affiliations of Japanese, rather than influence arising through language contact, which is my interest in this paper. However, the question of possible influence through contact has been raised recently by Alexander Vovin in his article, "Is Japanese Related to Austronesian?"[4] .

In this article Vovin criticises the attempts that have been made to establish a genetic relationship between Japanese and Austronesian. He sees these attempts as failing to maintain the requirements of the Comparative Method for shared basic vocabulary, with a significant number of examples having identical semantics, as well as for shared basic morphological markers, and regular phonetic correspondences. Vovin remarks[5] that it is significant that almost none of the Proto-Japanese verbs in the Swadesh list has any parallels in Austronesian, though almost all of them do have Altaic parallels, and concludes that there is no genetic relationship between Japanese and Austronesian. He recognizes that this does not exclude the possibility that there are certain Austronesian elements in Japanese, though these would be limited to a substratum vocabulary. However, he has not seen any treatment of Austronesian elements in Japanese, with the exception of Murayama's works, that would persuade him that there is indeed a significant Austronesian substratum in Japanese. He is therefore extremely sceptical of many of the existing Austronesian etymologies for Japanese words. The purpose of this paper is to take up this question of possible Austronesian influence on the Japanese language.
To say that there is a significant Austronesian substratum in Japanese is to say that Japanese would have been subject to interference through shift. Such interference covers the phenomena known as substratum, superstratum and adstratum interference[6]: *superstratum languages* are typically those of victorious invaders. Thus the masses of French loanwords in English would indicate that French speakers were a superstratum

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2 Dodo,Y and Ishida, H, "Population History of Japan as Viewed from Cranial Nonmetric Variation". *Journal of the Anthropological Society of Nippon* 98/3 (1990) pp. 269-287; and Ishida,H and Dodo, Y. "Nonmetric Cranial Variation and the Populational Affinities of the Pacific Peoples" *American Journal of Physical Anthropology* 90 (1993), pp. 49-57

3 See Bibliography for references to these authors.

4 *Oceanic Linguistics* 33/2, 1994: 368-390.

5 pp.383-4.

6 See Sarah Grey Thomason and Terence Kaufman, *Language Contact, Creolization and Genetic Linguistics*, University of California Press, Berkeley, Los Angeles, London, 1988.

even without historical knowledge, and this is confirmed by the clustering of French vocabulary into such semantic domains as law.

substratum languages are those of conquered or at least socio-politically subordinate indigenous populations and immigrants;

adstratum languages are those of invaded or invader groups that are neither dominant nor subordinate in the contact situation (some linguists reserve the term for a group that is only a part of the speech community they are shifting from).

It is the second category, the substratum, that Vovin suggests may be the cause of an Austronesian element in Japanese.

Thomason and Kaufman make a clear distinction between interference through shift and borrowing. Interference through shift arises through imperfect learning of a language (the "target language") by a group of non-native speakers, whereas borrowing is defined as the incorporation of foreign elements into the speakers' native language. A principal contrast between the two phenomena is that borrowing begins with vocabulary, but interference does not. Syntactic and phonetic changes, which are among the most expected shift-induced changes, will be among the last borrowed features. Therefore a prime question to be answered in investigating the question of an Austronesian substratum in Japanese is, whether this substratum brought about syntactic and phonetic changes. This immediately comes up against the difficulty of our lack of knowledge of the syntactic and phonetic structure of Japanese prior to the hypothesized interference through shift via an Austronesian substratum. However, Thomason and Kaufman acknowledge that while interference through shift begins with syntactic and phonetic change, it often goes on to contribute lexicon to the language, that is, if the degree of contact is sufficiently intense. So in this sense Austronesian lexicon in Japanese could *either* be part of the influence of an Austronesian substratum, *or* alternatively, represent a case of borrowing. Therefore this paper will take up this question of Austronesian lexicon in Japanese.

In the word-list (see Appendix) I have compared Old Javanese lexemes, as attested in their literary form, with Old Japanese.[7] The rationale for using Old Javanese is a) as a representative of Western Austronesian b) because some of the critical items seem *only* to appear in literary Old Javanese or in the Javanese *kawi* vocabulary . Thus to use forms reconstructed for Proto-Western-Austronesian would be to neglect this key evidence.

Note that no Sanskrit words have been included, since current wisdom is that these did not enter Javanese until a later date than the period under investigation here.

Bearing in mind Vovin's point about the absence of Austronesian equivalents for Japanese verbs, the vocabulary list is divided into different parts of speech.

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7 The dictionaries and orthographies used are those of Zoetmulder and Ohno (see Bibliography), except that Zoetmulder's is not used.

Discussion of data.

Tryon's dictionary was used to determine the distribution of the items in this list in other Austronesian languages. However, many items in the list are not to be found there: hardly surprising since a) by no means all Old Javanese forms are preserved in the modern language and b). the number of synonyms in Javanese, even for basic vocabulary, is very large, and only one of the possibile choices is listed in the dictionary. Of those items in the list that are to be found in Tyron's dictionary, it is striking that almost all are represented solely in languages of present-day Indonesia, with only three items also represented in Austronesian languages spoken outside Indonesia. The only areas in which these latter languages are located are 1. the Philippines (in the case of *lusung*, rice mortar) and 2. Taiwan (for *cucuk* and *we*, which are represented in Paiwan and Atayal). None are found in Austronesian languages outside this Indonesia- the Philippines- Taiwan axis. Furthermore, of the items found in Tryon's dictionary nearly half are specific to Javanese or to Javanese and one of its immediate neighbours (Sundanese, Madurese and Balinese).
This is very curious and interesting, given current opinion re the historical depth of Javanese, which is not thought to have existed as a separate language as early as the period in question here.

Semantic relationship of pairs

Vovin speaks of the requirement for "identical semantics" in the establishment of genetic links via the Comparative Method. Of course, it is not actually easy to establish identical semantics beyond doubt. But in the case of the pairs presented here, there is no doubt that they are semantically very close indeed. As a rough index, it is the case that for about half the pairs, the two dictionaries used have separately translated one half of the pair with the same English word. I would argue that there is a close semantic relationship between the remaining pairs as well (this is in contrast to Murayama's work, in which the semantic links between a Japanese word and its hypothesized Austronesian origin have to be argued rather carefully).

It also seems to me interesting and significant that there appear to be a number of semantic contrast which are found in both languages, e.g.:

near vs. far: *ḍakĕt* and *dĕkĕt* vs *doh*, and *tikasi* vs. *to2*
clear vs. indistinct/vague: *samar* vs. *kati* and *sama* vs. *kata*
over here vs. over there: *ika* vs. *iko* and *ka* vs. *ko*

Phonetic relationship of pairs

There is a similar closeness here, again in contrast to Murayama's work, where a rather a long chain of phonetic transformations is argued. Furthermore, not only are the items in the list often identical or near-identical, the shifts that *do* take place recur regularly. The following shifts are well represented in the data:

— there is what *appears* to be a general shift from voiced to voiceless, e.g. g>k, d>t (initially) (and if we accept Vovin's suggestion[8] that p is a better reconstruction than F, then b>p). However Javanese stops are typologically unusual because the two series have the same voice onset time (aspiration) and are distinguished by phonation type[9]. However, Javanese d occuring medially becomes r (see the pairs *kadang/kara* and *duduk/turuki* for example).

— Javanese c(ch) becomes t, e.g. *cucuk/tutuki* and *cuki/tuki2*. This means that Old Japanese t can represent three different Javanese phonemes (d, t, and c)

— I suspect Javanese j becomes Japanese c (ch) in some occurences, but have yet to compile adequate data

— there appears to be loss of a couple of initial consonants, i.e. l (*luwe/uwe*) and possibly w (*wutuh/utu*). Loss of initial w in Japanese is typical. However the situation is complicated by 1). some words in Old Javanese occuring both with and without initial w and 2).the existence in Old Javanese of two phonemes, w and ww (see Nothofer[10]). On the other hand in medial occurrences l becomes r and w F.

— among vowels, Javanese u seems to occur in two reflexes, i.e. u and o2. In view of Matsumoto's work on the close relationship between these two vowels in Old Japanese this is not surprising. It is surprising however to find quite a number of instances where Old Javanese i changes to a (e.g. *isi/asi*, *piring/pira*, *kikis/kaki*) which seems phonologically implausible

— there is a simplification of Javanese consonants preceded by nasalisation.

Finally, it may be noted that there is a tendency for Javanese verbal base forms beginning with s, t, or w to occur in Japanese in the nasalised form (e.g. *surat/nura*, *tiru/niru*, *tulis/no2ri*, *tut/no2ti* and *wawa/mawi*).

Reduction always appears to be reduction right.

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Of course, the question to be asked is, are all these correspondences in form and meaning a case of chance convergence? To begin to address this question, one may use the work of Nichols[11] who demonstrates on the basis of mathematical computation that the likelihood of finding a general resemblance between two words with the same

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8 Personal communication.

9 P.J. Rose, personal communication.

10 *The Reconstruction of Proto-Malayo-Javanic*, p.202.

11 Johanna Nichols, *Linguistic diversity in space and time*, University of Chicago Press, c1992, pp.24-5

meaning in two languages varies considerably according to the number of consonants involved. If there are only a couple of consonants is actually fairly high (c.5 in a hundred) whereas the probability of finding specific resemblances involving three or four consonants is extremely low (about one in ten thousand for three). The problem in the present case is that given the preponderance in Japanese of disyllabic base words with only one or two consonants, there is an extremely limited possibility of comparing sequences of three or four consonants. However, cases of the same "mixed" sequence (of consonants *and* vowels) of three to five items occur very commonly in the above list. Some of these do in fact include sequences of three consonants: e.g. *cucuk/tutuki, duduk/turuki, sosok/sosoki, muwus/mawosi, barĕsih/Farasi, matur/maturi, sasar/sasura.* In the case of particles, these are by their nature short words in which the possibility of chance convergence is much higher. However, I think an English speaker would be surprised to find e.g. "in", "by", "so" and "yet" reproduced in another language in near-identical form and meaning/function. For the same reason I find the following correspondences of particles striking:

i/ni, locative particle	i/ni locative particle
na, possessive particle	na, possessive particle
mun or mon, concessive particle	mo2 presents the concept denoted by the preceding word as sth uncertain and introduces an explanation/description probably historically related to the auxiliary of conjection mu mo (aux) eastern dialect form of auxiliary of conjecture mu
pwa or ya particle, which often seems to act as topic marker	wa particle
ara, emphatic particle	ara, emphatic particle
toh, emphatic particle	to, emphatic particle
emphatic particle mata. *not listed*	mata, adv, meaning 1) other 2) on top of that, in addition to that and 3) again [reduplicated form mata-mata, furthermore, still more].
de meaning 1. condition, cause, way, reason 2. by (through the agency of) and 3. in relation to, in regard to. In Javanese it is pre-positional	de, cause (post-positional in Japanese)

In addition, there are also correspondences between longer "function words" such as *masa/masaka* and *moga/moga.*

The points made above represent a quick-and-dirty starting point for a proper investigation. A way forward to a much more refined, exact, and convincing procedure has been suggested by P.J. Rose[12]. It involves calculating the probability of the occurrence of each consonant in a particular word with a particular number of syllables, calculated with reference to its chance of occurence in the phoneme system of the language, adjusted with reference to the phonotactic possibilities. It would also be necessary to take features into account. Such an investigation would involve considerable time and technical expertise.

Already at this stage, however, there seems to be fairly strong evidence of the adoption of Indonesian lexicon into Japanese, and not at any very great time-depth (if this were the case, one would not expect the close semantic and phonetic correspondences one finds here). But are we looking at a case of substratum influence, or of borrowing?
If it *is* a case of borrowing rather than interference through shift, how intense a level of contact does the data suggest?
Thomason and Kaufman provide a very useful borrowing scale, distinguishing five levels of borrowing: casual contact; slightly more intense contact; more intense contact; strong cultural pressure and very strong cultural pressure. They set out what lexical and structural borrowings are likely to occur at each level. Since in this paper only lexicon is under discussion, I will give only the lexical borrowing expected at each level.
casual contact: is distinguished by lexical borrowing only (i.e. no structural borrowing). It will involve content words, and non-basic vocabulary will be borrowed before basic vocabulary.
slightly more intense contact: is distinguished by borrowing of function words such as conjunctions and various adverbial particles.
more intense contact: involves borrowing of function words such as adpositions (prepositions and postpositions), derivational affixes which may be abstracted from borrowed words and added to native vocabulary, and possibly inflectional affixes (only on borrowed vocabulary items). Also personal and demonstrative pronouns and low numerals, which belong to the basic vocabulary, are more likely to be borrowed at this stage than in more casual contact situations.
(The two highest levels, *strong cultural pressure* and *very strong cultural pressure*, are further distinguished by moderate structural borrowing and heavy structural borrowing, respectively.)
Thomason and Kaufman classify borrowed items into "content words" and "function words". The data provided in the Appendix contains a large selection of the former, including basic as well as non-basic vocabulary. It is also interesting that quite a number of items relate to technology and social hierarchy, e.g.:

court life: palace woman (*nyai/nai*), court dancer (*baḍaya/warawa*)

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rice: rice-field (*sawah/saFa*), rice mortar/pounder (*lěsung/usu*)[13]
agriculture: new planting/spring (*baru/Faru*), millet (*awawut/aFa*)
technology: cloth (*tapih/tape2*), fence (*kikis/kaki*), storehouse (*guḍang/kura*), plate (*piring/pira-ka*), weapon/spear/sword (*duduk/turuki*), and the verb to paint (*nurat/nura*). (This last is a very interesting example because in Javanese this verb must have been extended to mean also "to write" — a meaning it shares with Javanese *nulis*, which occurs in Old Japanese as no2ri, to announce, declare, tell, proclaim one's intention (to an inferior), express the Emperor's intention: purposes for which writing was presumably first used in Java.)
social organisation: tribute (*cuki/tuki2*), kinsman or relative (*kadang/kara*)

There a also quite a number of pronouns (including personal pronouns) "function words" and particles[14] And there are some affixes. Borrowings in these categories would only be expected in a case of "more intense contact", (the third of the five stages), and not in cases of "casual" or "slightly more intense" contact.

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So the conclusion seems to be that we have here a case either of borrowing resulting from rather intense contact, or of interference through shift of sufficiently major proportions to have included lexical transfer as well as structural interference.
If it is a case of interference through shift, in my opinion this is more likely to be the result of superstrate or adstrate speakers rather than substrate speakers. These last would be less likely to have contributed considerable basic vocabulary and words relating to technology. And similarly if it is a case of borrowing, it is likely to be borrowing from a population group endowed with some prestige and with a relatively advanced technology. Could we have here something like the influence of Norman French on English? In this case the extensive lexical influence of French on English is partly a result of the shift by superstrate French speakers to Middle English in a situation where borrowing, by English speakers, was probably going on at the same time.[15]

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13 I am also inclined to connect Old Japanese *kasiki* to boil, steam, and *ko2siki* implement for steaming rice (Yayoi) with Jav. *kukus*, to steam rice, and *kukusan*, rice steamer, though I realise that since this involves metathesis it is likely to be disfavoured by linguists.

14 cf case of Eskimo borrowing function words, including conjunctions, resulting in a partial loss of the native Eskimo morphological means of expressing coordination and subordination, Thomason and Kaufman p.55. S.a. comnments pp. 56-7 re greater likelihood that morphological means of expression will be replaced by syntactic ones; also borrowed elements may not have exactly the same structure as in the language from which they are borrowed (in fact this is the most likely outcome, due to "reinterpretation"

15 Between 1066 and 1250, there were probably not more than 50,000 native speakers of French in a total population of about 1.5-2m. Though French lexical influence was heavy, it was rather light

Other questions that might be asked are: supposing we assume the existence of the hypothesized superstrate/adstrate group, what would the data suggest about its size? Was its influence considerable enough for us to speak of a mixed language, as Murayama has done?

These questions will take a lot of answering. At this stage, one should go on to compare reconstructed items from the appropriate time depth if possible— obviously, a major enterprise.

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in the basic vocabulary (c.7%). French structural interference (in phonology, morphosyntactics syntax etc) is also not extensive: see Thomason and Kaufman pp.115-126.

Appendix

This word-list does not represent all the data collected to date, but has undergone a preliminary sifting process.

The words in italics in the left-hand column indicate the distribution of the lexeme in present-day Austronesian languages, in the cases where it is listed in Tryon's *Comparative Austronesian Dictionary*. Abbreviations used are:

Bal: Balinese
Bat: Batak
Bug: Buginese
Ind: Indonesian
Jav: Javanese
Mad: Madurese
Sas: Sasak
Sun: Sundanese
Wol: Wolio

NOUNS,[16]

(Old) Javanese	(Old) Japanese
nyai, palace woman	nai, idem[17]
baḍaya, court dancer. *not listed*	warawa, idem[18]
iwak, fish. *Jav only*	uo and iwo, idem. Murakami says iwo is the older form, on the grounds that iwo ›uwo is a natural change, while the reverse is not. Normally one would expect Japanese to add a vowel after final k.
sawah, ricefield. *not listed*	sawa, idem, but older form saFa or sapa.
lĕsung, rice mortar, pounder. *Found in 10 Indonesian and Philippine languages, first vowel variously e, u, and i.*	usu, idem

16 Words in italics in left-hand column refer to Tryon's Austronesian dictionary, and indicate the number of Austronesian languages in which this word is found.

17 Nai may be the older form, since in the Indonesian languages there has been a historical shift from n to ny.

18 I feel this may be the earlier form. Note that there is at least one other example of a shift from final -wa to -ya in Javanese, i.e. wadwa › wadya; possibly also shift from pwa to ya.

esuk, isuk, morning, morrow: isuk is apparently the older form. *Jav , Sun.*	asa, asu, idem
cuki, cuke, a tithe, tribute. *not listed*	tuki2, tribute. Also mi-tuki2. [19]
tapih (waist)cloth. *not listed*	tape2, a white cloth made from the skin of a paper mulberry, or cloth generally.[20]
kikis, border, boundary fence. *not listed*	kaki, fence, boundary (of rice-field), also mi-kaki, fence of shrine or imperial court
paḍang, open, bare, laid waste, cleared (field)	Fara [N] a plain, a field; a flat wide surface
guḍang, gĕḍong, building to keep grain, treasure, furniture. *not listed*	kura, idem.
ĕri, thorn. *not listed*	ira, idem
yayi, younger sibling (reduplication also used for afterbirth.) *[jayi jo].*	ye means both younger brother/sister (*also* elder sibling) and afterbirth [Japanese vowel e is thought to derive from ai] [21]
kadang, kinsman, relative. *[Javanese], Sas.*	kara, idem
piring, plate. *Jav plus 4 (Ind etc).*	pira, a flat thing, and pira-ka, a flat earthen plate
wukir, mountain. *[Javanese only: gunung].*	woka (newer form oka), idem
suku, foot, base *Jav, Mad, Sun*	so2ko2, the bottom, also in mi-na-so2ko2, the bottom of the water
cucuk, beak, or in verbal sense to peck/stab (in Sundanese cucuk = thorns, spines). *Jav, Mad, Bal, Sas, (Bat), Paiwan*	tutuki, to poke at, from tutu plus ki, verbalising suffix
duduk, bamboo spear, and suduk, any weapon to stab or pierce. *[Javanese only: tumbak].*	turuk/gi, general term for swords
Jav we, wai, wwe, wwai, wway, meaning sun or day. *Jav and Atayal, Bal*	Fi original meaning is the sun. daytime, when the sun is above the horizon and it is light.the time duration between sunrise and sunset is counted as Fito-Fi.

19 Jap. tuki is derived by some from tugi, to continue (by extension, to present something continuously) or from "to attach one's soul to the inside of the thing presented", from a soul, by Origuchi.

20 Murakami says the derivation is *labai › tapai › tapĕ.

21 But proto-Japanese is reconstructed as *daCi or *diCa.

MJ baru, mbaru, new planting, and kawi baru = urip or tukul (the latter meaning to sprout, to come up, to appear newly, etc). *Jav not listed under spring; Bug is bari*	Faru , the spring, from the first to the third month in the lunar calendar. Used in compounds such as Faru-kusa, young grasses in spring, and faru-Fana, a flower which blooms in spring.
maga, to disappoint, and MJ, something that has not gone according to wish or plan *not listed*	maga, trouble, disaster
awawut, millet, panicum italicum. *not listed*	aFA, foxtail [Italian, German] millet
wawa, which has forms mawa and mawi.wawan is kawi for gĕgawan (or bĕktan), "what is brought along", e.g. in marriage. Pigeaud lists mawa and mawi as obsolete forms meaning to bring with one, to have in the hand. *Not listed.*	maFi, a present, an offering

VERBS

(Old) Javanese	(Old) Japanese
parĕm, clearing (after rain), *not listed*	pare, to clear up (the sky, weather)[22]
tiru, nasalised form niru, to imitate, follow, resemble. *common 9*	niru, to resemble, look something like, also maneru, narau, niseru
isi, to fill. *not listed*	asi, idem
sosok, to pour *[Jav only]*	so2so2ki, to splash, sprinkle, pour
sasak, to move straight ahead, to thrust something into something else; *not listed*	sas(a), idem
sĕrah, to surrender, give way. *Ind, Sun, Bal, Sas [plus Javanese]*	sar(i), idem (i.a.)
muwus (from wuwus), also mauwus and mowos, to utter words. *not listed*	mawosi, base mawos(o) or mawos (a), idem.[23]
kukur, to scratch or comb (also kikir, noun and verb, file). *not listed*	kaki, idem, base kak(a), probably from kok (M.4.4), which accords with u to o change observed elsewhere
sĕkar, flower, in verbal form meaning to bloom. *Jav only]*	saki, saki, root sak(a), see 2.3.2, to bloom
mihat, miyat, to see. *not listed*	mi, idem
pik, to catch/seize, and pikat, to catch birds; also pikut, to catch, hold fast, bend. *not listed [Javanese only: rĕbut].*	pika, to pull, pike2, to be attracted; also Fiki, to hold and draw something or someone regardless of resistance, to pull towards oneself by hand (e.g. string, grass, linear objects)
ngukuhi (base kukuh), to tie up. *[Javanese only: naleni].*	kukuri[24], to bind, to tie up with string etc.
surat, to paint, draw, or write, nasalised form nurat. *not listed*	nura, to paint
tĕtĕg, signal block, and ?tĕtuk, to knock, and tĕtĕr, repeatedly. *not listed*	tataki, to hit repeatedly

22 Matsumoto connects this word with para, to cultivate, Ohno connects it with para, an open, uncultivated field. I connect the latter with Javanese paḍang, bare, open (field).

23 But proto-Japanese is reconstruced as *mabo2s.

24 Base probably kukur.

tatal, cut-off piece, and tatas, broken, snapped (tumatas, ended, cut off), *[Javanese only: broken, pĕcah].*	tati, to cut
tutup, cover, lid, which in modern Jav. also has sense of concealment. *Bat, Ind, Sun,Bug, Wol.*	tutumi, from tutu, to wrap in, conceal, cover
modern Jav. tuwi, which is the krama of tilik, to visit, and is also a Kawi word. *not listed*	toFi, to2Fi, to inquire (after), to visit, to say 25
tuntun, to lead, command. *[Javanese only: pimpin].*	to2to2no2Fi, to lead/command
wuri, i.a. that which is left behind (wuri has sense of behind in both spatial and temporal sense) *not listed*	Furi, to become aged, grow old, wear thin as time passes
wuwuh, increase, grow [*Jav only*]	wowori[26] [Vi4] to grow in profusion. [N] a manner of growing in profusion. or such a place.
bĕrsih, barĕsih, to purify/clean. Also with sense of ritual purification ceremony as in bersih desa. *Jav plus Ind, Mad, Sas.*	Farasi, to clear up FaraFe2 means to clear up and is used of making offerings to a god to be freed of trouble or guilt, or of a ceremony of atonement
barubuh, to make a thundering noise esp when crashing down, and rubuh, to fall down, collapse	Fo2ro2bi2, to fall to pieces, to be destroyed, and Fo2ro2bo2si, to destroy, to demolish
awit, to stand or lie in the way, stand or lie ready, await, wait for, lie in wait (for an enemy). *not listed*	aFase VtL2 (Vt of aFi) (1) to make someone/ something encounter someone/ something. (2) to make something head towards something. to target.

25 But proto-Japanese is reconstruced as *twop from *tuCap or *taCup.

26 Base probably wowor.

hati, which has forms mahati, mati, and meanings include to pay attention to, to bear in mind, to give special attention to, appreciate specially, favour, give full attention to, look forward to. *not listed*	mati, to wait for, be on the lookout for [as in modern Jav ngati-ati], and mati-zake2, sake prepared for a guest.
(h)atur, as in makatur-atur to respectfully present or offer, mahatur-hatur, to appear in the presence of a person of high ranks with presents or offerings, etc. *not listed*	maturi, Vi/t4, meaning i.a. to offer or to present, and attached to other verbs to express humbleness [cf. Jav use in matur nuwun].
wĕro, intoxication. *[Javanese only: mabuk given].*	weraki VI4, to get drunk, and wera-wera, a manner of being drunk
tut, substantive, = following, and anuti, to follow. *Jav and Bal.*	no2ti, afterwards, future, later, next
sasar, to go astray, follow no fixed road. *not listed*	sasura, to wander

ADJECTIVES

(Old) Javanese	**(Old) Japanese**
tahu, skilled, also with prefix a. *not listed*	atahu, skilled.
yu, beautiful and also as female title for nobility. *not listed*	yo2si, auspicious, good, true, beautiful: si is adjectival ending. There is also yuki2, made up of yu something sacred + ki rice wine. the country which offers the sacred wine.[27]
siku, angle, angular, morally reprehensible. *not listed*	siko2 (angularity, ruggedness, in diverted use ugliness, fiendishness.[28]
arang, scarce, rarely. *not listed*.	ara-ara, sparsely, here and there. But is usually derived from ara, sparse, rough, coarse"?[= jav ala, evil, ugly, harmful?]
luwe, hungry. *Jav only*	uwe, idem.
wutuh, whole, intact, also alternative form utuh in modern Javanese *not listed*.	utu, prefix, utterly, totally

27 But proto-Japanese is reconstructed as *doG.

28 According to Matsumoto 4.3.3 the root is sik(a) to scold; there is no example of this however in Joodai literature.

ḍakĕt and dĕkĕt, close *Jav, Ind, Sun.*	tikasi[29], adj meaning close in distance or time, or intimate.
doh, distant, afar *Jav only*	see entries in dictionary sub to2, used in compounds to indicate far, distant (also do?)
samar, vague, indistinct, and kati (kawi[30],)clear (also MJ katon, katok?)	sama, a vague direction, and kata, a clear direction
dipara-para, scattered, dispersed. *not listed*	Farara, describing something that is scattered
pira-pira, quite a few, many. *not listed*	Firo2si[31],, wide, numerous

PERSONAL PRONOUNS

(Old) Javanese	(Old) Japanese
wwang (I, first person) (modern Jav wang) *Jav only*	wa, idem
wong (person, male) *[Javanese only: lanang]*	wo[32], idem
si, personal referrant and sira, second and third person *not listed*	si, second person

29 Many Japanese adjectives end in si; it is not clear whether this was originally a suffix.

30 Kawi words are a bit of a mystery, While many of them are from Old Javanese, many are not: perhaps they represent a lost central Javanese dialect, Old Javanese being the language of east Java.

31 See note 27..

32 Also used to mean "central pillar", cf. usage of tiang, krama form of wong, to mean "pillar".

PRONOUNS, ADVERBS, PARTICLES AND OTHER PARTS OF SPEECH

(Old) Javanese	(Old) Japanese
duk, time, when, duké, at the time. *[Javanese: wayah].*	to2ki, time (one of the 5 divisions of the day or night); also used for months of lunar calendar
MJ urus, which is Kawi for tata and běněr and used as n in ora urus, unwise, heedless, and arus, proper, worthy. *not listed*	yo2rosi, diverted form of yo2rasi, appropriate, so-so However, this is usually said to be an extended form of yo2.
bari, a highly productive word which in its multiple forms has the meanings of only just, only for a moment, every time, whenever, as soon as, from the moment that, not before, not until, whenever, whatever, every, again and again! *not listed*	Fari, which has a wide range of meanings related to temporality, denoting change, alternation, newness, repetition etc
de meaning 1. condition, cause, way, reason 2. by (through the agency of) and 3. in relation to, in regard to. In Javanese it is pre-positional	de, cause (post-positional in Japanese)
masa, meaning 1. time, month etc (from the Sanskrit) and 2. certainly not, it is impossible that (with or without following arealis)	masaka, N, said to be from masa, the direction of the eyes, ka a place, = this very place, this moment, now, and masani, adverbial form of masa [cf Jav masane], = 1). as one has expected, really, and 2) as a matter of course, according to a social regulation, 3).for sure 4) just, exactly, and 5) now, to be about to. Note that modern Japanese masaka has the same meaning as old and modern Javanese masa and Malay masakah, i.e, how can that be, not a chance, etc. In these languages the time meaning of masa is from Sanskrit. Has the adverbial meaning of masa(kah) undergone the same shift as the American "sure" in both Japanese *and* Javanese??

moga, used to express i.a. wish or hope. Zoetmulder gives usages which show that it is attached to verbs as well as nominals etc.	mo2ga, particle, attached to nominals, adjectives, adverbs and the particle ni, with meanings: 1. (I) want to have ~ and 2. (I) wish that s.o./s.t. would be ~
pești, which Pigeaud gives as regional form for OJ and MJ pasti and pĕsti, used with verbs to convey certainty	be2si, aux [listed sub F], indicates the speaker's judgment that the activity/state of affairs denoted by the preceding verb should be accepted as an inevitable condition, thus it can express obligation, destiny, or the speaker's conjecture with very strong assertion
batang, guess, interpretation, probability, one could say, imagine, suppose that	Fata, by any chance, note also Jap Fata, 20, probably the original meaning was the number of fingers and toes, and cf OJ batang, which is a measure of capacity, and Malay use of batang as a numerator
ika, that, those (of what is at some distance from speaker) and iko, that (near you, yours) also iku, that (near you); there is also iki (var. ike) which also = this, these, this here, this now (near the speaker in place or time). Are these formed with the prepositional/locative particle i?	ka, that (far away) and ko, this
i/ni, locative particle	i/ni locative particle
na, possessive particle	na, possessive particle
mun or mon, concessive particle	mo2 presents the concept denoted b y the preceding word as sth uncertain and introduces an explanation/description probably historically related to the auxiliary of conjection mu mo (aux) eastern dialect form of auxiliary of conjecture mu
pwa or ya particle, which often seems to act as topic marker	wa particle
ara, emphatic particle	ara, emphatic particle
toh, emphatic particle	to, emphatic particle

emphatic particle mata. *not listed*	mata, adv, meaning 1) other 2) on top of that, in addition to that and 3) again [reduplicated form mata-mata, furthermore, still more].

Affixes for investigation:
sa prefix
verbal prefix ma in both languages: check Jap usage

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