PICTURING THE UNIVERSE

Adventures with Miura Baien at the Borderlands of Philosophy and Science

In *Gengo*[a] ("Deep Words"), 1775, Miura Baien ventures a systematic analysis of the entire universe, and all the things in it. To grasp or express new and difficult philosophical ideas such as we find in *Gengo* we can scarcely do without images, diagrams or metaphors. The more difficult the ideas the more we demand visual imagery but also the more difficult it is to find that imagery. The ultimate test of an imaginative interpretation is how well it fits the text. Ill-fitting visual imagery has not served Baien well.

Miura Baien[b], 1723-1789, was a polymath like most of the scholars of his day, but *Gengo* was his major work. He revised it 23 times in as many years before it was published and continued to write expositions of it until his death. There is a striking contrast between the final *Gengo* and its early drafts such as *Genkiron*[c] ("On Primal *Ki*"), 1753. *Genkiron*, written in *wabun* (Japanese style), appears naive, unoriginal, rambling and hasty in comparison with the sophisticated, complex, systematic and lengthy work into which it evolved as *Gengo*, written in *kanbun* (Chinese style). There can be no clearer example of a progress to philosophical maturity than Baien's revisions, stimulated increasingly in the latter years by his contacts with other scholars, especially scholars who were encouraging one another to pursue scientific enquiries. Whether it be for personal reasons or for some matter of principle, Baien chose to spend his life in his remote village near Kitsuki[d] on the Kunisaki[e] peninsula, in north-east Kyushu. But he twice made the journey to Nagasaki to hear more about Western learning, and more significantly, he had many connections with the Kaitokudō[f] school at Osaka.

The first section of this paper will introduce some fundamental features of the universe as Baien presents it in the final draft of *Gengo*. When he reached the 12th of the 23 drafts he hit upon the idea of introducing his picture of the universe with the rich metaphor of a brocade robe. Sadly, interpreters of his system too often fail to overlook its significance, providing imagery of their own that is inconsistent with Baien's text. The second section gives an account of some dangers in applying Western ideas to his system, some of which are hazards in the interpretation of other Chinese and Japanese thought. The last section, with those misguided interpretations out of the way, outlines the significance of Baien's interest in science.

I - The structure of Baien's universe

The manuscripts of *Gengo* contain over 200 diagrams. Much has been made of these in recent times, sometimes much too much. Baien intended them to clarify specific points, and they do. On the other hand he was also aware of how much they could not express. In fact he often seems to be saying "Notice what this diagram lacks, that is what I am speaking of." Baien expects readers to follow his diagrams by reading his words. His words are difficult to follow, however, and a reader's response is all too often to draw still more diagrams without stopping to ask why Baien himself did not draw them. These gratuitous diagrams frequently imply and suggest many things that Baien did not, would not, or could not say, thus attributing to him ideas that conflict with his text.

Baien often expresses his frustration at the inadequacy of diagrams and words to portray reality:

> Oh, I may draw a flower with consummate skill, but it will not bear seeds. I may carve a faithful copy of a bird, but it will never be as beautiful as the original. The craft of heaven borrows nothing from man, and the craft of man can never imitate heaven. [Preface, Section 3, NST p. 379]

He was always mindful of the possible misuse of numbers and diagrams: "three talents, four masters, five elements, six *ki*, nine mystic markings, ten mystic diagrams - these all dazzle people's minds". [*Letter to Yumisaki Yoshitada*, *Zenshū* I, p. 346] It is significant that the diagrams that accompany the *Gengo* text seldom combine together. One would expect them to do so if they were all straightforwardly parts of a single schema of the universe. In one case he draws two complementary diagrams, one each side of a single sheet of paper [Ogata, p. 547], an effort to make the static portray the dynamic.

jōri and the brocade robe

Baien calls his theory "*jōri*"[g]. Sometimes *jōri* is described as a single principle but it is better described as a complex system of nature. *Jōri* is a principle of opposition to which everything in the universe is subject, so that every real thing is a member of a pair. Nevertheless, to describe *jōri* as a principle suggests that it is simple, and simply stateable, when in fact it is extremely complicated to state. His aphorism "one is one and one" (*itsu soku itsu-itsu*[h]), is deceptively brief. This deceptive simplicity may be one of the reasons why *Gengo* has been found so difficult. To describe "one is one and one" as a "single principle" is

misleading if it suggests that "one is one and one" is all we need for deriving the whole *jōri* system. Worse, when taken out of its complex context, the cabbalistic tone of "one is one and one" may entice readers down a false interpretative path to mysticism. To regard *jōri* as mysticism is exceedingly unjust to a diligent keen-minded philosopher, a pioneer in scientific realism. For it was Baien's interest in the scientific world that drove him to the herculean task of setting out a system of nature, encouraged by his dialogue with the brilliant astronomer, Asada Gōryū[i], the works of others such as the earlier Kaibara Ekken's pharmacopoeia, *Yamato honzō*[j], later by the revolutionary anatomical text *Kaitaishinsho*[k], and so on. Baien found he needed a complex of working notions, he expounds these at great length, and in his own fashion.

Baien's diagrams should not be ignored, they give us helpful clues to his intentions. The point here is that it is dangerous to take the diagrams as primary and the text as secondary. We can read the text without the diagrams but we certainly cannot read the diagrams without the text. Around 1755, Baien read Dazai Shundai's *Bunron*[l] ("On Written Composition"). Shundai uses the term "*jōri*" there and Baien uses the term for the first time in his next draft.[i] In *Bunron* also, the sustained metaphor of a woven brocade, contrasted there with a robe sewn together from patches, is used to illustrate good prose. Shundai's metaphor of woven brocade was a gift to Baien as a model of the universe.

On opening *Gengo*, the reader is faced with a block of seemingly opaque sentences in Baien's own technical language:

> Object has nature and nature is endowed with object. Nature and object merge without seams. Thus they are one whole. Nature pairs with body, object pairs with *ki*. Nature and object stand distinct, this is *jōri*. Thus they are two sides. Nature is nature alongside object, object is object alongside nature. Therefore, one is one and one, and one and one is one. [NST p. 389]

....and so on.[ii] Relief comes soon:

> As an illustration, take a piece of brocade. The raw side consists of warp threads and woof threads, scarlet threads and green threads, but on the finished side are flowers, grass, and fabulous birds. The spirit of these comes from the imagination of a clever woman.
>
> Although the brocade is essentially warp threads and woof threads, when a

> spirit works on them to form objects, each warp thread is separate from the woof threads, yet each warp thread combines with a woof thread. Their combination yields leaping dragons and dancing phoenixes. They may leap and dance, but if the threads are separated, warp spontaneously aligns with warp and woof aligns with woof. And so one piece of brocade has a nature that is endowed with two bodies, the raw side and the finished side, a clever seamstress brings spirit to it, objects are fixed to it by silk threads, and an incomprehensible human art attains the mystery of heaven's creation....

Among the useful metaphors he found in this model are the seamlessness of the woven piece; its unity; its intricate composition; warp and woof as time and space; and above all, the two sides of the brocade, which are parts, but not pieces, of the whole. One side is a strange world of interlaced coloured threads "whose *ri* are concealed", the other side is the vivid and lively world we know, dragons and phoenixes notwithstanding, in which the natural order stands out distinctly. Baien examines the woven universe. He discovers and inspects the different ways it folds and unfolds, he turns it inside out, he looks at how the threads are woven. He investigates the colours and shapes of the birds and creatures on it, and also the background against which these creatures stand out.

Once we have studied the passages containing the brocade illustration we can no longer think that *jōri* is simple. Many *jōri* pairs that form a vital part of the fabric of the universe are found in this rich model and it is in this context that he introduces us to some of the primary terms of the extensive technical lexicon which he devised. (Most of his pairs of "opposites" are expressed as compounds of two single characters, a few have four characters. In translating them, I have adopted a convention of joining them by "and" and enclosing them in angle brackets.) For example, the brocade robe illustrates: <whole and side>, <warp and woof>, <separation and combination>, <nature and body>, <spirit and object>, <event and object>, <fine and coarse>, <concealed and manifest>, <passing through and filling up>, <hour and place>, and <merging and distinctness>.

This list provides an example of an ingenious linguistic machine which Baien uses throughout *Gengo*. The terms of a *jōri* pair take their precise definition from each other, something in the way that "car" and "motor" came to take their meaning from each other in the compound "motorcar", so that "car" and "to motor" can now be used separately with meanings derived from that union. In fact, "motorcar" is not unlike a *jōri* pair if one sees

"car" as the static body and the verb "motor" as the dynamic function. Notice that the list above contains both <spirit and object> and <event and object>. ("Object" is a default translation of *"butsu"*[m], "thing", English "thing" being too useful a word to be tied up as a strictly technical term.) In the case of <spirit and object> and <event and object>, because a), each *jōri* pair is a precise union of opposites; and b), "spirit" is not the same as "event", then "object" in <spirit and object> cannot mean the same as "object" in <event and object>. This shift in the meaning of the term "object" is what I call "the *jōri* shift". By means of the *jōri* shift Baien creates new terminology from old words, that is, from natural language.

There are dozens of such shifts of meaning, "spirit", "object", "heaven", "*ki*"[n], and "shape", for instance, are each paired with several other terms. The precise meaning differs with each shift but a thread of meaning persists through all the occurrences of a term. This invites comparison with the two-part concepts of Shao Yung[o] which Ann Birdwhistell calls "hemilogs". Because of the *jōri* shift, Baien appears to differ radically from Shao in the respect that "one of the parts cannot form a pair with a member from another hemilog." [1989 p. 60] But that difference is not quite so radical when we realise that according to *jōri* the meaning of a term must change when it is paired with a different term. Why then does Baien not use a completely different term, for example why use "object [*butsu*]" in both <object and event> and <object and spirit>? Two terms in place of "object" would indicate that a different feature of the universe was denoted in each case, namely, the opposite of "event", and the opposite of "spirit". The answer is that something would be lost, the common thread that runs through both occurrences of "object", and through most ordinary uses of "object" or "thing".

patches of light in dark words?

Kuroi kotoba no kūkan ("Patches of Light in Dark Words"), by Yamada Keiji[p], is a modern Japanese translation and commentary of the "Preface" and "Core Text" of *Gengo*. It occurs in the popular series *Nihon no meicho,* "Great Books of Japan".[iii] The discussion below on the hazards of relying on diagrams or on ill-fitting Western philosophical concepts to interpret difficult Eastern texts points often to this work. Yamada is by no means the only scholar who is sometimes misled in this way, we are all liable to be led astray by Western habits. Yamada's name comes up often because his commentary and idiomatic translation of *Gengo* is the most readily available source both for Japanese students of Baien and for Western readers, although readers seeking a modern Japanese translation can also avail

themselves of Shimada Kenji's rendering in *Nihon shisō taikei*[q] Volume 41. Shimada's version of *Gengo* is, on the face of it, much more difficult to read, remaining as it does reliably close to the original *kanbun* text, but in the end it makes more logical sense than the version in *Kuroi kotoba no kūkan*. Baien's text is difficult because the ideas behind it are extraordinarily complex and one has to work to understand them. Translating into "simple" or "ordinary" language is a fine objective but it is difficult to attain where the author himself has been compelled to invent a technical lexicon. The brocade robe metaphor helps us where idiomatic translation fails, in some respects it is the Rosetta stone of the *Gengo* text.

The terse blocks of the *Gengo* text come together piece by piece as an intelligible picture if one accepts the following premises:

i) The brocade is a model of the universe

ii) Baien's *jōri* universe is dynamic

iii) Baien is able to express the dynamism of *jōri* by an ingenious method of using words from natural language in a new way that is technical and precise.

Yamada's work denies all three of these premises:

i) He says that Baien thinks in diagrams first, not in words. [1982 p. 154]

ii) He says that Baien's universe is static.

iii) When he translates Baien's *kanbun* into idiomatic Japanese, Yamada does not think it is necessary to be consistent and precise.

On this third point, one inconsistency in Yamada's idiomatic translation is in his treatment of the important pair <concealed and manifest>[riv]. Yamada gives at least 3 different translations of this, and when we include the cases where <concealed and manifest> is contrasted with another pair, <invisible and visible>[s], there are at least 6 different versions altogether. Sometimes he even translates "<concealed and manifest>" as "<invisible and visible>". Likewise, elsewhere he fails to distinguish between <whole and part>[t] and <whole and side>[u]. Instead, he interprets "side" as "part". [1982 p. 185] The precision of Baien's *jōri* lexicon has been disregarded. The pair <concealed and manifest> is very difficult to understand and it will become even more difficult if we repeatedly change the meaning of the terms as we discuss them. Treated in this way, the text of the Core Text would indeed be dark, and the subsequent volumes of *Gengo* well nigh impenetrable.

<whole and side>

If we interpret “side” as “part” we shall miss altogether the vital message of the brocade model. In brief, the raw side and the finished side of the brocade are not parts of the brocade in the same way that two pieces of fabric might be parts of the brocade. Two pieces of the fabric would be “parts” much more like “part” in Baien’s <whole and part>. <Whole and side> is the pair that tells us most in the brocade illustration:

> The whole is a single piece of brocade, but it has two sides, front and back. So we discover what division is. Thus, the piece of brocade is originally one, and therefore a whole, but the front and back as two, are two sides. Being a whole entails that front and back merge and the seams between them are concealed. Being two sides entails that front and back stand distinct and reveal *jōri*. [NST p. 389]

The brocade model explains the maxim “one is one and one”. The finished side of the brocade with its dragons and birds is quite distinct from the raw side with its interwoven warp and woof threads, yet together they constitute one and the same robe. The brocade requires both the raw side and the finished side, but it is not one thing divided cleanly down the middle like an apple cut in two. Baien describes the union of the sides as “seamless”. The raw side and the finished side each occupy one and the same portion of space and time as the brocade itself, in Baien’s words, they “dwell in the same place”. The brocade alone is the whole thing. The difference between the two sides is not only their different relations to the body of the wearer of the robe. It is because the raw side and the finished side are intrinsically different that a person would not wear the brocade inside out.

So it is with Baien’s universe. The “now you see it now you don’t” feature of the brocade sheds light on difficult lines such as these:

> A thing with shape we call a “manifest” body, and a thing without shape a “concealed” body. That which holds a place although its body is concealed is heaven within the coarse. If we look at heaven from within the fine it is just the same as earth. [*Reply to Taga*, *Zenshū* II. p. 93]

When Baien talks of “heaven within the coarse” he means the particular great body of *ki*[vn] that contrasts with the object, earth. An analysis of what he calls “fine” *ki* obliterates the “coarse” particularity and separateness of heaven and earth. Today he might say that the dichotomy of earth and sky has no place in atomic physics. He might have said that one side

of the brocade, that is, the universe, consists of objects with shape, such as trees, lakes, or heavenly bodies, the other side consists of sub-atomic particles. He would also say that like the brocade, both sides are equally real. And most important, although the difference between them is intrinsic and not only a matter of how we look at them, they cannot be counted as two distinct things, but "sides" of the one whole. The physicist Yukawa Hideki[v] has commented on the applicability of Baien's *jōri* system to Böhr's theory of the complementarity of the wave and particle theories of light. [1970] The relation of lightning and thunder to an electrical discharge also might be described as Baienesque insofar as they are not separate parts of the discharge, but two intrinsically different "sides" of it.

a dynamic universe

Physically, diagrams are flat, black and white, and static. It may be because he believes that Baien thinks in terms of diagrams first that Yamada comes to the surprising conclusion that Baien sees the universe as static. [1982 pp. 143, 154] From the first pages with the image of the interweaving of warp and woof, Baien's picture of the universe in *Gengo* is unintelligible if it is not seen as physically dynamic.

Despite Yamada's description of Baien's universe as "a world constructed according to a strict dualism, so clear that it can be represented in one diagram" [p. 143], Baien's diagrams cannot all be mapped into a single two-dimensional schema, nor even a three dimensional schema. In fact, very few of them combine, because it is an essential feature of his system that *jōri* subjects move in and out of focus in a kaleidoscopic way. The patterns of a kaleidoscope, limited though they may be by the permutations of mirrored pieces of coloured glass, cannot be condensed into a single diagram.

In particular, the pair <warp and woof>, which is illustrated by the warp threads and woof threads of the brocade, tells us that Baien's cosmos is not static. Warp and woof represent the preconditions of time and space, "the perpetual ongoing" and the "all-pervading" described here in a later exposition of *Gengo*, *Reply to Taga*[w] (1777):

> If we were to shut our eyes and imagine this heaven and earth to be swept away, we could not extinguish the hours, the perpetual ongoing which passes through, surging on. Nor could we extinguish place, the all-pervading which fills up everywhere. The perpetual ongoing would flow on like water with neither beginning nor end in sight.

> And even though the sun, moon, stars and planets, the earth on which we tread, the heaven at which we gaze, would all be swept away, so that we could neither point to south, east, north or west, nor distinguish up from down, the boundless all-pervading would remain.[*Zenshū* II, p. 95]

Through <warp and woof> the brocade model becomes dynamic, the process of weaving the brocade is the correct model.

> The brocade is ordered by *jōri*. Without overlooking a single scale or feather, the clever woman weaves dragons and phoenixes. When leaping dragons and dancing phoenixes are traced out with warp and woof, how lifelike they are! [NST p. 389]

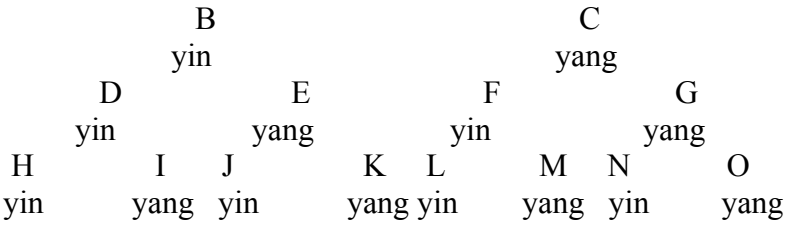
Other pairs, such as <passing through and filling up>, <event and object>, and <hour and place>, are also dynamic. They are related to time and space through their relation to <warp and woof>.

Kozai Yoshishige[x] had an imaginative approach to the role of diagrams in relation to Baien's *jōri* system. Kozai was struck by an analogy with the diagrams of games of Go, no two of which are alike from beginning to end, and he was not surprised to find a Go board among Baien's relics. [1976, p. 31] The Go diagrams, like Baien's diagrams when they are taken together with his text, represent something that is both real and ever-changing, infinitely variable, yet rational.

II - Downward branching tree diagrams

There is another problem with structural diagrams of Baien's world. Even in the most thoughtful and scholarly accounts of *jōri*, the temptation to draw downward-branching tree diagrams seems to be irresistible. On the left below is a tree diagram taken from Shimada Kenji, a meticulous scholar who is the least likely of us all to take liberties with Baien's text, and on the right the *Gengo* diagram, entitled "Warp, woof, division and contrast"[y], from which it was taken. [NST pp. 651, 551]

One-primal-*ki*
A



Shimada is not alone in sketching tree diagrams, many other scholars also draw such diagrams. Miura Baien himself does not.

yin and yang as empty places

Looking at Shimada's diagram we are in danger of missing Baien's radical use of the pair "yin and yang". The only terms in Baien's diagram are "one", (in the circles), and "two", (straddling the lines), which name the separate state of the one on either side. The ones are to be paired, by their relation to the "two" between them, and by their common derivation from a single "one" in the next circle inward.

But Shimada's diagram conveys more than this. In Baien's diagram there is no indication that the left-hand members are consistently of one kind, yang-like, and the right-hand members are consistently of the opposite of that kind, yin-like. Indeed, none of Baien's diagrams are of that form. The characters for "yin" and "yang" are not in Baien's diagram. Shimada's addition of them might suggest that "yin"s have something in common with each other, distinct from something the "yang"s have in common. However, in Baien's system it is vital that "yin" and "yang", in their basic sense, should be interchangeable. Baien was adamant that his use of these terms was a radical departure. He describes working with the traditional pair as like "scratching an itching foot without taking off one's sandal". [*Letter to Yumisaki Yoshitada, Zenshū* I, p. 345] To emphasise his revision he came to write the characters for "yin" and "yang" without the *kozato*[z] radical.

It does not matter to him which member of the pair is called "yin", and which is called "yang": "Yin and yang are hollow places. They are names for one and one." [*Zeigo*, *Zenshū* I, p. 385] "One and one" does not convey that the two members of a pair are opposites, so to convey this he chooses "yin and yang". It must be admitted that in his account of the physical cosmos Baien also uses "yin and yang" in something more like the traditional sense, associated with heat and cold, for example. Along with the *jōri* shift, which is a rule for

members of pairs, his method includes a license to change the meaning of a pair itself according to a context defined by other *jōri* pairs.[vi] By this rule <yin and yang> can also play a much more minor role in his system. On the other hand, as "names for one and one" they are essential to the whole *jōri* system. "Yin and Yang" is the title of the opening chapter of *Gengo* in which the brocade model is introduced early and at length.

In passing, one wonders whether "yin and yang" might have been misinterpreted elsewhere through the use of gratuitous diagrams. Parallel columns of yin-yang pairs are common in Western commentaries on Chinese thought. But are there many such representations of yin and yang in Chinese texts? If there are not, we should take care with any analysis that involves the physical arrangement of left and right columns and make certain that we are not adding ideas that are absent from the original. For instance, when Angus Graham attempts to match Saussure's "syntagm and paradigm" with yin-yang columns he relies on the words "horizontal" and "vertical", and gives us a very thinly stretched interpretation of Chinese "correlative thinking". [1989 p. 319] But this could not be a problem in the case of Baien's texts, for because of his technique of meaning shifts, an overall arrangement of pairs in two columns, headed by "yin" and "yang", or any other terms, is impossible anyhow.

triangles and pyramids

When Yamada draws a downward branching tree diagram to illustrate division and contrast, he uses the phrase "pyramid structure":

> If we take the example of the branching of a river, or of two people gazing across opposite banks, as representations of the pyramid structure of existence (concepts), they are immediately intelligible. [1982 p. 185]

A pyramid structure is easy to draw. Why then, we should ask, did Baien himself not draw "the pyramid structure of existence"? The brief answer is that a pyramid is nothing like the structure of existence portrayed in *Gengo*.

Pyramids require triangles. A circle does not have an apex, and Baien's diagrams are all circular. Literally and symbolically, apex and centre are quite different. In contrast to Baien, in the late work *Tung-hsi-chün*, Fang I-chih[aa] (1611-1671) does draw triangles to

illustrate a principle of opposition, in the form of three dots like an enlarged "∴" sign. This would seem to accord with his "idealist" approach, in contrast to Baien's realist approach in which such triangles have no place. Fang I-chih describes the apex of his triangle as the one that runs through the other two. There is no doubt here that the apex is of a higher order in some sense important to him, and it is possible, as some suggest, that there was an element of mysticism in the Ultimate One of Fang I-chih. Nevertheless, the *jōri* system does not yield a hierarchy of being. Baien makes it explicit that the smallest divisions are as real as the great undivided One. (Yamada's conflation of existence with "concepts" will be dealt with presently.)

Baien elaborates on his aphorism "One is one-and-one" with the simile of a piece of paper cut or torn in two: "One piece is concave, one is convex, but when joined they combine without a gap". [Preface Section 6] Two real opposites are united by the real one, but this one cannot be counted as a third feature of nature, it is the two, just as the two are one, so there can be no overlap. In other words, the raw side and the finished side unite as the one brocade robe, there are not three things. Pyramids require triangles, and triangles require three points.

hierarchies, universals and classes

We must be careful when we apply the term "level" to Baien's system. When people say that Baien speaks of levels of existence they sometimes imply also that each level is superior to the level below it, or that each level is more "abstract" than the level below it. In *Gengo* Baien is emphatic that the "ones" of "one and one" have the same status as the "one" in which they combine. On this particular point, *Gengo* is consistent with the early *Genkiron*:

> It is not that first there was the One primal *ki* and afterwards all the ten thousand things of heaven and earth. The One primal *ki*, like all the things of heaven and earth, has no beginning and no end... [*Zenshū* I, p. 751]

There is a danger with the downward branching tree model that it might lead to taking the hierarchy too seriously, especially for those who look for mystic messages in their study of philosophical texts. Baien was more concerned with differentiation than with "complete understanding" of a One that is essentially incomprehensible. The essential incomprehensibility of the ultimate "One primal *ki*" is a basic assumption surviving from the

early *Genkiron* to the final version of *Gengo*.

Another danger of the downward-branching tree model is that it might incline us, in some passages, to interpret Baien's theory in terms of Western ideas such as “universals and particulars”, or “classes”. Yamada offers the following diagram of <opposition and comparison>, given here on the left [1982 p. 187]. Compare this with Baien's matching pair of diagrams on the right, entitled “Combined diagram of division and contrast, opposition and comparison”. [NST p. 550]:

class
0----------A

1--------A_1 A_2
opposites
2----A_{11} A_{12} A_{21} A_{22}
opp. opp.
comparison

comparison

In the diagram on the right, Baien has tried to add a dimension by making the pair of circles reversible, as it were. What have these circles to do with classes? Members of a class are grouped according to some universal feature that they share. Dogs and cows are members of the class “mammal” because they share some common properties, likewise, we might say that tomatoes and blood are members of the class of “red things”. But sun and shade are opposites. Their union is not a common property, but a whole, of which they are two sides, like the sides of the brocade robe. Moreover, a class may have any number of members, but the union of a *jōri* pair, is, by definition, always the union of exactly two things. In *jōri*, “light”, the union of sun and shade, does not name a class, and the raw side and the finished side are not members of the class “brocade robe”.

abstraction

If we do choose to think in terms of common properties, we can construct a hierarchy of classes beginning with "concrete" particulars, such as particular people, through a hierarchy of increasingly more general terms - Japanese → human being → land mammal → mammal → animal. It does make sense to say this is based on "abstracting" more and more widely shared properties at each step, and hence to say that each step is more "abstract" than the one before.

Yamada sees a class hierarchy in the *jōri* system which he calls "unification through the abstraction of common factors" [1982 p. 153]. But Baien has no theory of properties or "common factors", so he has no such hierarchy of abstraction. Anyhow, even a branching tree schema need not represent levels of abstraction. A family tree is a good example. Starting with one person and taking his ancestors back generation by generation we find two analogies with *jōri*. Firstly,

the difference between the generations has nothing to do with a scale from concrete to abstract, they are all real persons. There is no reason to believe that the "One" which branches as "one and one" is more abstract, in any sense, than the members of the *jōri* pair that "open" from it. Secondly, few instances of the branching of *jōri* pairs are demonstrated to work in practice beyond one or two steps, and this is so with real family trees. Multiplying by the power of two does not yield the true number of one's ancestors in each generation backwards if one's parents share the same great-grandparent.

Nevertheless, although it is sometimes said that the Chinese and Japanese languages are unsuitable for expressing so-called "abstract" ideas, the writing of Miura Baien himself is an exception, if not one of many counter-examples. Simply by conjoining two Chinese characters he can produce new terms, "abstract" indeed in the specific sense that they are philosophical or theoretical, but whose meaning is immediately clear. This method of coining technical terms is not available to writers of English, but Chinese writers have often used it, albeit less systematically than Baien does. And another original Japanese thinker, Andō Shōeki, a contemporary of Baien although the two seem to have been unaware of each other, also uses this device in his philosophy of nature. [Yasunaga 1992 p. 56]

concepts

A consequence of speaking in terms of "abstraction" is the temptation to substitute "concept (*gainen*)" for Baien's term "name (*na*)[ac]", forgetting that Baien was not familiar with

Western philosophy.

The word "concept" raises questions about meaning and the relation of ideas to words which are quite alien to Baien's project. Yamada goes so far as to use "concept" for "name" throughout his modern Japanese version of the *Gengo* “Preface”. This results in representing Baien as beginning Section 8 with the sentence "Words are concepts". If we use "name" for "*na*", Baien begins Section 9 with the obvious statement:

> When a man meets an object he will always call it by a name. He names it and others also name it. That is why there are several names for each object.

Yamada interprets this as something far from obvious:

> When a man meets an object he will always assign a concept to it. He assigns it a concept and others also assign it a concept. This is why there are always more concepts than objects.

That version does not make much sense. How do we count concepts? How many are there, how many things are there of which we have no concept? It is no doubt because he has read Yamada that Najita Tetsuo makes the misleading statement that in *Gengo* Baien “turned to the general problem of language as conceptual expression”. [1987 p. 278] The substitution of “concept” for “name” renders Baien's words “darker” than they need be.

If words or names were concepts, that would mean that our concepts of a thing would vary just according to the word we use to name it. In other words, people who use the same name would have the same concept, and when one person uses different names for the same thing he would have different concepts of it. In fact, because English speakers have names for things that are different from Japanese ones, if names were concepts their thoughts would be so different from the thoughts of Japanese speakers that they could never learn Japanese. In ordinary language, “*gainen*”, like “concept”, refers to an idea, or some sort of mental activity. Baien's “names”, however, are “words”, which are necessarily spoken or written symbols. To translate “*na*”, name, as “*gainen*”, concept, converts an observable phenomenon, an utterance, into a vague, unobservable mental act.

Yamada Keiji describes Baien's realism as “realist conceptualism”. This term is used of European scholastic theories of universals, and particularly that of Abelard who held a

middle position between nominalism and realism about universals. But Baien had no theory of universals. As it happens, Baien would have agreed with Abelard that there are words which have no referents, the "names" of imaginary, fictitious or illusory things. Baien also makes it clear that these cannot be the "words" of the *jōri* pair, <word and subject[vii]>:

> The mouth can utter even when there is no subject.... A subject must be real if a word is to match it appropriately. [Volume of the Small NST p. 491]

The brocade model illustrates many *jōri* pairs, but Baien does not use "dragon" and "phoenix" as *jōri* terms, so they are not "words" in the sense of "word" in <word and subject>. But like the *jōri* terms in that passage, they are simply things that the mouth utters or the brush writes.

dialectic

By taking these notions about hierarchies, concepts and abstraction, which have all at some time or other been attributed to Baien's system, and putting them together with his own catch phrase "unity in opposition", it is not surprising that many modern commentators describe Baien's system as "dialectic" on the grounds of a superficial similarity with Hegelian or Marxist theory. For Hegel, it belongs to the nature of everything to be a "unity of opposites" [Wood 1981 p. 200], and in his own sense, for Baien too.

We can imagine how this assimilation to Hegelian theory might happen: A scholar with a training in German philosophy attacks the opaque *Gengo* text. His eye catches a familiar phrase "unity in opposition" - Hegel! and this is the catch-phrase of the *jōri* system! No wonder he feels he has found the key to *Gengo*. He turns to Hegel for help in interpreting the rest. Hegel is talking about concepts, about abstract thought. So is Baien talking about concepts? The text does not bear this out. Perhaps although he did not realise it, Baien should have been talking about concepts. In fact, Baien can be credited with getting so much right that if we were only to take his pairs as pairs of concepts his system might be mapped neatly on to Hegel's ---

That would be an encouraging thought for those who endorse Hegel but a perplexing thought for dissenters. Either way, how could an 18th century Japanese thinker, educated entirely in Sino-Japanese tradition, share the sophisticated German system? Hegel's

philosophy is not at all the same as Baien's. A more careful reading of *Gengo* reveals that the substitution of "concepts" or similar mental entities for the elements of the *jōri* system completely ignores its motivating force.

In general, it would be safe to say that although Baien's universe itself is dynamic, the *jōri* system is nothing like a developmental process. Furthermore, Baien does not believe he is constructing a system at all. He believes he is uncovering piecemeal what is already before us, and that the whole, ordered as it may be, is too vast and intricate for one person, or even all mankind, to master. Baien's justification of the *jōri* system itself is the increase in understanding that the theory gives rise to, an unshakeable conviction which he claims to have derived from experience, rather than from any Cartesian style certainty. The doubts that Baien emphasises as necessary to constructive thinking are not systematic Cartesian doubt either, though more than one reader of Baien's remarks on doubting has cried "Descartes!".

Sueki Takeshi[ac] is one who concludes that the similarity with Hegel has been greatly over-stressed. He contrasts the two in detail, and says:

> In simple terms, Baien's fundamental *jōri* formula, "One is one and one, one and one is one", has a resemblance to Hegel's formula of "truth, refutation and unity". But when it comes down to it, the two are not the same, moreover, their differences are not only based on fundamental differences in Baien's and Hegel's approaches, they involve fundamental differences between Japanese and European culture. [1990 p. 1]

Saegusa Hiroto[ad] (1892-1962), who wrote extensively about Baien, took the approach that Baien was an unspoiled dialectical materialist. Saegusa had such authority that his work must be held partly responsible for the tendency to interpret Baien in this way. Of the general environment in which Saegusa worked, Maruyama Masao says:

> In the second half of the twenties came Marxism, sweeping through the Japanese intelligentsia like a whirlwind and drawing the academic world, too, into its turbulence.... Marxist methodology presented a startling freshness of vision as an integrating, systematic science that offered to unite the specialized sciences into a comprehensive Weltanshauung....
>
> It was not, however, until after 1934 ... that Marxist scholars began to publish in the history of Japanese thought proper, as opposed to economic or social history. The

> studies of "traditional" ideology - National Learning, and Shintō - by Nagata Hiroshi, Torii Hiro, Saegusa Hiroto, Hani Gorō and so on - belong to this time. [1974 pp. xxiiif.]

Maruyama would exclude Miura Baien's thought from the "traditional" ideology, but Saegusa's work on Baien otherwise fits Maruyama's picture. Saegusa's interpretation seems to have influenced Gino Piovesana's translation of *Reply to Taga* [1965], and very likely Katō Shūichi's[ae] description of *Gengo*: "*Mysterious Words* seeks to explain the universe as an almost Hegelian dialectical development of matter" [1983 p. 171]. And Nakamura Hajime[af] says: "It is asserted frequently that, in the Tokugawa period, logical thinking appeared in some Japanese scholars, for example, in Baien Miura, but all that we can discern in him is a way of thinking similar to Hegelian dialectics" [1964 p. 549]. Nakamura says elsewhere:

> Miura Baien expressed a theory of dialectics of his own. "The way to understand Nature (or the universe) is dialectics (*jōri*). The secret (*ketsu*)[ag] of dialectics is to see synthesis (*gōitsu*)[ah] in antithesis (*han*)[ai]. It is to give up one-sided preoccupation and to correct marks (*chōhyō*)[aj] - *yin* and *yang* are antithetic to each other and constitute opposition. As they are antithetic to each other, they can be brought into synthesis." [1967 p. 194]

An alternative translation of the above passage from *Reply to Taga*, including the lines that Nakamura omits, runs as follows:

> The way to true understanding is *jōri*. The key to *jōri* is simply discarding habits of thought, following the correct signs, and seeing opposites as one. Discarding habits of thought means freeing oneself from personal attachments.
>
> Following the correct signs means being able to distinguish those things that are signs from those that are not. For example, as we see it there is every sign that the sun and moon travel westwards, but the truth is they travel eastwards, and water seems certainly to be the enemy of fire, but fire in fact depends on water.
>
> The way of heaven and earth is yin and yang. The bodies of yin and yang contrast and

> oppose one another, and by opposition they combine as one. Then they constitute heaven and earth.[see *Zenshū* II p. 89]

Baien's correction of old beliefs about the sun and moon or water and fire leaves much to be desired, but at least it was clearly an attempt to find sounder empirical hypotheses. Terminology such as "dialectics", "thesis, antithesis and synthesis" (terms that even Hegel seldom uses, and Marx only once! [Wood p. 197]) do nothing to elucidate Baien's meaning. Piovesana deserves credit for translating Baien's terms into a European language, and the shortcomings of his translation expose the dangers of using Saegusa's exegesis as source material. [Piovesana 1965][viii] It is fair to acknowledge that it is not only because of his authority that Saegusa has been influential in interpretations of the *Gengo* project but also because Baien himself is so difficult to read. It is understandable that Katō and Nakamura, who were engaged in writing general surveys of Japanese thought, should rely on secondary sources.

In Japan since the 1970s there has been an upsurge of interest in Baien and new writers in Japan have shown freshness and variety. One of these, Takahashi Masayasu[ak] says:

> Since Saegusa has pronounced that Baien's *hankan-gōitsu* is dialectic, materialists have strictly adhered to this, but it is unproductive. The Baien research done by Japanese materialists is sometimes really extraordinary, but ends up by lapsing into idealism or metaphysics. [1981 p. 287]

The notion of "contradiction" is important in discussions of dialectical materialism. Although something is lost in translating "*mujun*"[al], whose original Chinese meaning is "spear and shield", as contradiction, "*mujun*" fits the Marxist idea very well, which is why Ogawa Haruhisa[am], for instance, says the combination of "a shield that cannot be pierced by the sharpest spear", and "a spear that cannot penetrate the hardest shield" is an excellent example of contradiction. [1983 p.27] Ogawa says further that the "Marxist" confrontation does not result in victory for one side, but resolution. The Chinese imagery would seem to fit the Marxist notion of class conflict better than the bland Latin derived "contradiction". "Spear and shield" has a dynamic nuance, it places contradiction in the sphere of events and activities.

Nevertheless, *jōri* opposition is not a theory of strife and resolution, nor does it involve logical contradiction. There is no conflict between the two sides of the brocade or the two pieces of the one piece of paper; nor is there any literal contradiction involved in the pair <man and woman> or in the cosmic turning westwards and turning eastwards, because at any one time it is not the same thing that is both man and woman or turns both westwards and eastwards. *Jōri* opposition frequently involves unity or balance, members of opposing pairs coexist harmoniously in the universe. Wood discusses pairs of opposites in organic development:

> A warm-blooded animal, for example, has mechanisms both for generating body heat and for losing heat to its environment. Viewed in the abstract, it has two opposite tendencies, tendencies which even 'negate' each other, destroy each other's effects. Yet in the organism they are arranged so as to complement each other... Each of them is necessary to the life of the organism, and thus ultimately necessary for its own opposite. [1981 p. 201]

Wood's well-chosen example happens also to express exactly the relation of contradiction to *jōri* opposition. The destructive, negative effect of contradiction is present only when "viewed in the abstract". In Baien's case, these bodily mechanisms might well have been a *jōri* pair, and abstractions of thought would not have come into it. Their harmonious and dynamic complementarity and interdependence would have been the criteria by which the mechanisms might have been accepted in Baien's system. If Hegelians describe these things as "contradictories" [Wood p. 202], this requires some process of abstraction that does not concern Baien who says, "The diving down of fish does not prevent the flying upwards of birds" [Preface 11]. His system allows no picture of two contradictories resolving into a "higher" one. The torn paper does not become whole again, both the whole paper and the two pieces defined by the line of demarcation are simultaneously present.

III - Science

It is a great strength of Baien's system that it is not hierarchical. There are two ways in which we can come to understand a *jōri* term: a) by seeing that it names one of a pair of

opposites, or b) by seeing that it names a union of opposites. This fact has a very desirable consequence for Baien's project. To understand one particular feature of reality he is not compelled to map out the total picture. Take the *jōri* term "light" as a term that can be understood in two ways:

<light (3) humidity (4)>

<sun (1) shade (2)>

We can understand sun, (1), if we see that it is the opposite of shade, (2), and vice versa. We can understand light, (3), in two ways: a) as the union of sun and shade, that is, as (1) and (2), or b) as the opposite of humidity (4). Baien would claim that the cosmological theory from which he derives <sun and shade> is based on observation of the actual world. We may further discern that <light and humidity> unite as "colour"[an], (5), but we can understand (1), (2), (3) and (4) without doing this. We can understand them for the simple reason that they name observable features of the world. Logic and reflection do not suffice to give us understanding, we need practical science. To understand even what it is that "<sun and shade>" names we need to know at least that the earth is round. When it comes to understanding <light and humidity> we are already into cosmology and astronomy. As a matter of fact, much of Baien's own cosmological theory was false, and he was unsure and puzzled about the heliocentric theory. He frequently reminds us of his own human fallibility. This admission that his specific theories were corrigible did not destroy his confidence in the theory of *jōri*. He believed that *jōri* would slowly be revealed in the course of scientific investigation.

We notice that Baien is not always concerned to name the union of a pair, <*ki* and object> is one example, and there is no name for the oneness of <word and subject>[ao]. For Baien science advances like this, its terms are dictated by what is discovered in heaven and earth, progress in any specific branch does not depend upon unlocking the whole structure. Baien did not see his own project as so different from the projects of his scientific friends, but we nowadays describe his project as "philosophy", and theirs as "science". From his letters to Asada Gōryū, in particular, it would seem that although Baien fully appreciated his own lack of specialised scientific skills, he saw himself to be working on another section of the same jigsaw puzzle, as it were, or at least on a broader outline of the same unsketchable structure.

I ching, yin-yang theories, and to some extent the theory of the Five Elements, are survivors. In a recent study, Wai-ming Ng has counted 1,085 authors of the Tokugawa period who wrote about *I Ching* [1996 p. 18], and modern versions still sell well. Baien, like others before him, found it easy to dismiss these doctrines as unscientific. When he demolishes such mere speculation, which he calls "*kiyu*"[ap], he is inviting his readers to think about science, a task in which he believes himself to be a pioneer. He uses the term "*hazu*"[aq] for spurious necessity:

> When we ask about things, people answer simply that this is how they must [*hazu*] be, and leave it at that: eyes must see, ears must hear, heavy objects must sink, light objects must float, these things are "common knowledge". [*Reply to Taga, Zenshū* II p. 86.]

Baien does not say merely that *kiyu* and *hazu* yield no explanation. He points out also the sad fact, familiar to us, but quite possibly new to many of his readers, that where there is an explanation, in many cases they have little chance of understanding that explanation. Science, properly carried out, is not publicly available. Nor is it merely confined to the more erudite scholars, because of specialization much of it is barred to them too. In 1785, when the heliocentric theory was well-established among Japanese astronomers, Baien writes to Asada:

> At the beginning of this spring, I reread several of the passages you recommended. I spent several days rolling and unrolling volumes. At last I understood your meaning and was overjoyed....Although I cannot understand all your methods you have given me a great notebook for the study of *jōri*. [*Zenshū* II p. 753]

And he sighs in this letter: "The more advanced my investigations, the less they will be accepted." From correspondence, and from the fact that Baien sent his pupils to the Kaitokudō [see for example Najita 1987 p. 5], and other historical evidence, it is highly probable that Asada valued Baien's opinion too. Although Baien's difficult philosophical works did not see much light for the next hundred years, there is no doubt that he had considerable influence as a scholar and thinker. It is significant that this influence was felt in the more scientific circles.

Baien had no time for the false opposites of Chinese yin-yang theories, these were "*kiyu*". This raises the most difficult question about Baien's whole enterprise: why then did he

not simply say that the binary system was false? Why, for instance, when the square and the moon failed, did he substitute the straight line and shade as opposites for the circle and the sun? Why not just give up the whole notion of opposition?

One reason is that *jōri* contrast is fundamentally linguistic, and systematically generates a rich lexicon of philosophical terminology for viewing the natural world. His philosophical objective was original, and the poverty of traditional terminology was a serious impediment to his analysis. *Jōri* opposition provided a theory of natural kinds, in the sense that for Baien, a natural kind is whatever is named by a *jōri* term. Such a term is meaningful if and only if there is the one-to-one relation, <word and subject>, the relation of name to thing, that is, the relation of term to real phenomenon.

biological taxonomy

There is some justification for Yamada's vehement criticism of Baien's attempts at biological classification, in which he concludes: “The little boat of Baien's philosophy trembles like a floating leaf, and founders pathetically.” [1982 p. 258] The counter-attack put forward by Takahashi Masayasu is even more vehement.[1984 p. 43] A more gentle resistance to Yamada’s onslaught is possible.

If we look at Baien's *jōri* system as an effort to further the study of biological taxonomy we must agree with Yamada that Baien's contribution is dismal. The *jōri* system itself, apart from Baien's actual teaching, probably did not help much with astronomy either. I offer the following as a plausible interpretation of the relationship of *jōri* to biological taxonomy.

Baien's philosophy looks weak at this point because we are looking at it in the wrong way. One function of biological classification, including the classification of the old Sino-Japanese pharmacopoeia, is to sort things. *Jōri* does not sort things at all. The systems of taxonomy given in text-books of biology are in some respects like the mail sorting room of a post office. We could say that all the animals and plants classified in the biology textbook are like letters coming into the office to be sorted. Beginning with the two big groups such as airmail and surface mail, letters are sorted according to smaller and smaller regions until there is a batch for each postman. There will be great differences in the number of letters in each group, a batch of mail in Japan may contain thousands of letters for Tokyo, and none for Liechtenstein. Biological classification is like that, some groups are nearly empty of

examples, whereas others embrace hundreds of species.

Jōri is quite different. In Section 14 of the *Gengo* Preface, Baien discusses the naming of various biological species. If we look at this passage carefully we can see that these species are not the members of real *jōri* pairs. And from his letters to Asada Gōryū it is clear that Baien believed that Asada could do brilliant astronomy without the benefit of the *jōri* system.

Baien compares "mere classification" with *jōri*:

> Man and woman is a pair, but "husband and wife" is a classification. The classification of man and woman as husband and wife is good as far as classification goes, but its value is man-made. Thus "husband and wife" is variable but man and woman does not change. [Preface, Section 10]

He does not forbid the use the terms "husband and wife", nor does he say that we should not use the names for plants and animals. On the contrary, plants and animals may have several names each. His discussion of names of plants and animals in Section 14 of the Preface is interested and enthusiastic rather than critical. Baien's approach contrasts nicely with that of Kaibara Ekken in *Yamato honzō*. On the one hand, Ekken by his own research made considerable additions to the herbals of his day, whereas in this field Baien was at best a dilettante. On the other hand, although Kaibara gave lip service to the need to discover "the principles of things" his own efforts in this direction were quite primitive compared with the system of *Gengo*, and however much Ekken may have savoured the joys of knowledge for its own sake, in his writing he felt obliged to justify such studies as promoting the welfare of mankind by discovering the medicinal qualities of herbs. Baien wrote as though his ultimate end was to confirm his theory of *jōri*, taking it for granted that a clearer understanding of the fundamental principles by which the universe worked was reward enough.

Baien's approach suggests that if biology is to advance, its classifications should derive from some sound theoretical basis. He would say that *jōri* offers a sound theoretical basis. Today we are still searching for sound theoretical bases for our biological classifications. Zoological classification on the basis of good theory gives information about the evolutionary story, for example, and botanical classification on the basis of good theory can be supported empirically by the results of DNA tests. Baien puts forward his *jōri* system as a basic theory for science. We should not criticise *jōri* because it is a poor way of sorting

animals and plants, like a bad post office that has a poor method way of sorting letters. For *jōri* is not a way of sorting animals and plants at all.

Concluding remarks

In studying the philosophical systems of Japan or China, it is impossible to rid ourselves of all Western philosophical apparatus, nor should we try to do so. We need all the help it can give us. Baien's field of enquiry is not unique, if indeed a unique field were possible, and a critique, or even exposition of his theory would be worth little if every question beginning "What did Baien think about... ", "What would Baien say about...", or "Where does Baien stand in relation to..." was dismissed with the reply "Baien says nothing about that in the text". Strange as his system may seem to some readers, it is a rational one, and it is a proper question whether or not the texts commit Baien to particular views. It is also appropriate to say that certain questions did not occur to him, but should have if he had thought more thoroughly about what he was saying.

Nevertheless, replies to such questions cannot be forthcoming if their very expression involves terms alien to his system. The situation is worse still if those terms themselves are vague or loosely used. The temptation to fall back on those Western technical terms with which one is comfortable is hard to resist in the case of the interpretation of Miura Baien. It was not because Baien expressed himself poorly that *Gengo* is difficult to understand. On the contrary, the brocade passages, in particular, show a masterly use of imagery. Baien would say that *Gengo* is difficult to understand because heaven and earth is difficult to understand. However often Baien is mistaken in his analysis, if we read his texts carefully, including the messages of the brocade robe, there is no reason to abandon the hypothesis that Miura Baien was imaginative, well-educated, diligent and meticulous, and that he meant what he said.

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i This draft is entitled *Suirinji*[ar] ("the Angler"), and here, besides introducing the brocade metaphor and the vital term "*jōri*", Baien's written style switches from *wabun* to *kanbun*.

ii This continues:

> *Ki* is heaven, object is earth. Nature is endowed by one, and bodies are divested from one. This endowment by one and divestment as two, corresponds to the warp from the aspect of division, and to the woof from the aspect of the contrast of one *ki* and one object.
>
> By parting, two stand distinct, by combining, two merge into one. If one were simply one there would be neither separation nor combination, and if two were simply two, there would be no division or contrast. One and two are not simply one and two. Stability entails severalty, and being entails wholeness. By division, one is parted, by contrast, two are combined. Division is the warp, contrast is the woof. Warp and woof are parted spontaneously by jōri.

iii This 1982 volume is entitled *Miura Baien*. The other half of it is by Yoshida Tadashi, who gives translations and commentaries of other texts which show Baien's interest in science more directly, such as anatomy and astronomy. Much of this is from the massive work *Zeigo*[as], 1789. *Kuroi kotoba no kūkan* was republished unchanged and separately under its own title in 1988, in time for the Baien bicentenary of 1989.

iv "Core text" of *Gengo* is followed by "Volume of Heaven", "Volume of Earth" and "Volume of the Small", each of which is again divided in two. The two divisions of "Volume of Earth" are "The Concealed" and "The Manifest".

v "*ki*" here is the traditional Chinese word "*ch'i*", referring variously to some primal stuff such as air, ether, material force, energy etc. Baien's use of the term would warrant an essay in its own right, its numerous meanings vary with context and the *jōri* shift.

vi Baien is referring explicitly to this feature of his method in the Preface, Section 3 where he says:

> If I take A: B, C and D all come in association with A; if I take B: A, C and D all come in association with B. From C and D we move on to E and F, I and J, and so on. Hence when we are within the realm of motive power, heaven and earth are also motive power, when we are within the realm of body, heaven and earth are both body.

By what we might call "realm shifts", "<heaven and earth>" has different meanings, in this case according to whether the realm is "motive power" or "body".

vii "Subject" is a default rendering of Japanese "*shu*"[at]. One meaning of "*shu*" is "master", and it is consistent with Baien's realism to say that with his *jōri* terms the "subject", that is the real thing, is master of the "word".

viii Nakamura refers to the modern Japanese translations in *Nihon no yuibotsuronsha* (Japanese Materialists), Saegusa 1956, (1928) p.93 and *Miura Bairn no tetsugaku* (The Philosophy of Miura Baien), Saegusa 1973 (1941).