The tetrahedron can encourage designers to formalize more responsible strategies

John Wood

Keywords

Design | four-fold logic | relational (nature of design) | writing | tetrahedron

Abstract

This article will outline a non-linear method of writing that I have been developing since 1990. It assumes that academic writing is a productive way to explore and guide the practice of design, and that this is important for environmental and other reasons. Today's designers play a key role in helping us to attain the kind of lifestyle to which all societies are now encouraged to aspire. Enabling them to deepen the way they think would have positive long-term benefits. The auto-didactic potential of writing is well known, but I believe it can also be applied to help designers to become more self-reflexively in touch with their entrepreneurial and professional roles in the world.

A SUMMARY OF MY PROPOSITION

In adopting a 'deep ecology' standpoint I propose that all design courses be overhauled and relaunched from a stronger ecological basis. This would add a sense of reality to an ethical discourse that – where it has been discernible in design courses at all – seldom goes beyond a humanistic standpoint. In addressing this problem I question the appropriateness of received modes of essay and dissertation writing that we offer to students of art and design. In challenging assumptions behind these conventions of academic writing I offer a more ecological model of writing that is therefore more purpose-defined, outcome-centred, reader-empathic, and self-reflexive than the 'standard' essay format.

A SUMMARY CONTEXT TO THE PROPOSITION

The idea of academic rigour is still invoked

The western academic culture evolved its own protocols of writing from traditions of oratory and alphabetical representation over the last two and a half thousand years. As a result, the modern genre of 'academic writing' emphasizes the importance of rhetoric and precision. Together, they incorporate some of the key features of what we often call 'academic rigour'. I have argued that 'rigour' is a metaphor that is rarely used with a due sense of care, understanding or purpose (Wood, 1995; 2000). For example, in my experience it is unusual for someone who uses the term 'academic rigour' to be clear about how it helps their students to be better artists, designers, or citizens.

The idea of academic rigour is anachronistic

In my view, the idea of scholastic rigour makes more sense if we explore it in the context of the mediaeval monastic scriptorium. Before the advent of the printing press, the need to copy books faultlessly by hand led to an emphasis on the scrupulous detail and form of the text itself, rather on the act of writing. The rhetorical and fastidious form of writing that led to an emphasis on the 'Book' became so well entrenched within the academy that it still seems natural or 'correct' to most of us. The more we focus on the 'Book' and its form, the more we tend to undervalue the situated act of writing and its ethical outcomes. Unfortunately, the less we attend to the practice of writing, the less help it can be as an active relational system that reconciles author, reader, topic and context.

A more situated model of thinking is required

This is unfortunate. In my experience, most students need extensive retraining because of their previous education. Almost irrespective of their cultural and educational background they find it alien to write in a highly self-reflexive way. They therefore experience difficulties in addressing their writing to an actual reader, or in using the word 'I' in an honest way. I describe a system in which the conscious separation of generative, speculative, veridical and presentational stages of writing can first be made. This is necessary because – in a rhetorical culture that depends increasingly on competitive claims of, for example CVs, advertising, quality assurance and 'spin' – their requirements seem to compromise one other. My approach seeks to make the implied roles and conflicts more explicit by mapping relations between the actual and the imagined environment of writing, the various professional and

personal modes of authorship, and the creative opportunities afforded by explicating pathways between author and reader, context and proposition, etc.

WHY THE FORMAT OF THIS ARTICLE MAY SEEM STRANGE

I hope that the format of this text serves to illustrate some of its own arguments. Although I have often encouraged students to write in the first person it is unusual for me, and it still feels a bit strange. I am pleased that more academic disciplines are beginning to challenge some of the dubious scientific assumptions behind the remote, third-person style that is used to address an unnamed reader. Arguably, design is different from most other academic disciplines in that it has less interest in making truth-claims unless they are used in the context of actions and practices. Creative practices such as design are highly relational activities whose significant relations involve real people. Each has a particular mindset, predicament, and way of thinking and communicating. In this regard, our responsibilities can be mapped and owned by using techniques of writing that can reconcile complex organizational imperatives with our verifiable capabilities and claims to knowledge.

(ME) THE AUTHOR

Having justified the article's style and theme, I will now describe myself. This may help to illustrate the idea. It is also intended to help you – the reader – to relate to these ideas and proposals. This acknowledges the fact that humans seek evidence of credibility in order to know how much trust to afford a given message. I was a practising artist and performer from the mid-1960s until the end of the 1980s when my anxieties about global trends led me to launch several design degrees that emphasized a more thoughtful approach to practice. In my work as a designer most of my ideas were intended to enable us to live in a more ecologically harmonious way. They included energy-saving systems for buildings and authoring software for designers. At present I run the MA Design Futures programme at Goldsmiths College and co-founded a project called 'The Attainable Utopias Network'.

(YOU) THE READER

As I do not know who you are it is impossible for me to describe your particular interests and background. This is a fundamental problem of writing that was of great concern to Plato and many of his successors, yet we tend to ignore it today. However, it is of particular significance in the context of design. In seeking to address it from my own perspective I will assume that,

like me, you are professionally involved in education in some significant way. If not, I hope that you will still find my remarks useful. It is possible that some of my methods can be adapted for use in other contexts. I hope that this approach will facilitate new ways to reconnect our creative practices with the world around us. If you do find my methods helpful, please contact me j.wood@gold.ac.uk to let me know.

MY BROAD CONTEXT FOR THIS ARTICLE

Today, we live in an increasingly overburdened natural world in which technological and organizational changes are now routine, and in which problems such as social disparity, climate change, pollution, and reductions in biological diversity are now accepted as the norm. Urbanization is now an aspiration for many countries that previously were self-sufficient in their living styles. Globalization represents a relatively recent increase in the scale of technological changes that have encouraged us to rely increasingly on monocultural systems of farming and the wasteful transportation of similar foodstuffs across larger and larger distances. On the other hand, oil reserves will last only another decade or two before they become uneconomic as a staple fuel. In short, we live in a society besieged by risks that threaten the general well-being or survival of the world that we know. This brief summary of global issues is the backdrop for discussing how designers and other creative individuals should best acquire their professional skills.

THE EDUCATION CONTEXT FOR THIS ARTICLE

Until now, the short-term 'realism' and pragmatism of virtually all of our leading design universities has been driven by the myopic assumption that we must be followers, rather than leaders of the corporate community. Most of the 'leading' institutions of design education still take a pride in supplying the current needs of industry rather than in offering long-term agendas. This has proved disastrous. Over the last three or four decades we have tacitly endorsed a doctrine of economic growth that continues to be welcomed by everyone willing to ignore its medium- and long-term implications. In this sense, the creative industries have played an increasingly important role in this vast conspiracy of denial. Therefore, anyone who teaches in the art, design and communication disciplines is in a critical position of influence. This is an urgent problem and we all share responsibility for dealing with it.

REFLECTING UPON MY ATTITUDE TO THIS PROPOSITION

Although it feels strange to adopt such a personal and dictatorial stance, the seriousness of our predicament seems to call for it. If I am justified in depicting the situation as very serious, then it calls for a serious response. Addressing you in a personal voice encourages me to imagine how you may respond. Like all of us, my task has been difficult because of the way I was educated in thinking and writing. An empathic mode of writing first requires the ability to reconcile one's own sense of being with that of others and with the world that accommodates it. For example, if I know my own feeling I am better able to imagine how someone else might feel. This self-reflexive state of awareness may therefore provide the basis for a much-needed collective wisdom.

THE RELEVANCE OF THIS CONTEXT TO YOU (THE SPECIFIC READER)

This quest is clearly part of a vast agenda that is beyond the scope of this article. Today, it is fatuous to say that corporations must change their ways. Likewise, it is not enough to blame governments for the lack of wise legislation. Ultimately, we are all responsible. In my view it is no longer acceptable to support degree courses that play down the importance of long-term ecological and ethical concerns. This article may usefully remind readers that designers are, in a significant way, culpable for what is happening. It also reminds us that their actions are informed, to a large extent, by the methods and aspirations we pass on, as teachers. In seeking to focus on what can be achieved, this article points to a contrast between two things. On the one hand, we may be proud of the successful commercial outcomes of our approach to creative practice. On the other hand, we may admit to the ineffectiveness of our ethical 'tools' for helping designers to dream, 'think through', rehearse, and enact their transformative potential in society.

A BROAD CULTURAL AND HISTORICAL CONTEXT FOR THIS ARTICLE

Part of this conflict can be traced to what is usually described as the 'western' mindset. Moreover, it has been blamed for alienating us from Nature and from our own sense of being. Indeed, it can be seen in a rather solipsistic idea of 'creativity' that began to emerge during the eighteenth century. It is this Byronesque spirit of righteous arrogance that informed the egoistic ethics of consumption. It has therefore become the engine of economic growth that is kept alive by art and design schools today. Unfortunately, we see the export of this mindset to less-economically 'developed' nations who, ironically, have much to teach us. As I have

suggested, a full exploration of this issue is not the main concern of this article. Nevertheless, it highlights the need for a serious re-envisioning of the methods of writing and reflection that are taught in our schools and universities. As I imply, although the United Kingdom is famous for inspiring a culture of innovation and playfulness, many twenty-first-century students are still encouraged to use academic writing techniques that were introduced in the eighteenth and nineteenth centuries. Who is responsible for these problems, and what can we do about it as individuals and professionals?

A MEDIUM-SCALE (PROFESSIONAL) CONTEXT FOR THIS ARTICLE

My article's medium-scale context is the familiar tension between what we clumsily polarize as 'practice' and 'theory'. Reacting to a traditional emphasis on theory, within the old universities, some pragmatic design educators were wary of what they saw as an unhealthy emphasis on declarative knowledge in orthodox universities. They believed, for example, that theory all too easily becomes isolated from practice. They feared, for example, that writing could become used in a post-hoc way to justify ineffective judgements or dubious actions. Although this attitude is now less common, the methods and practices that upheld the theory–practice split are still with us. Hence, the cultures of doing or making and thinking or writing have yet to be integrated in an optimal way. This problem can be traced to historical differences between the crafts guilds and monastic traditions; and it is from these two cultures of practice that the atelier system and the library-based research culture emerged as distinct strands (see Schön, 1985). I would argue that both have shown some antipathy or lack of understanding for the other side. Fortunately, the hard-line positions are merging slowly into a more reflective discourse of praxis. Art and design education has been important in pointing the way to a healthy fusion of these two systems of thought and action.

OPPORTUNITIES FOR RESPONSIBLE INNOVATION

From this perspective, the role of art and design education is important to the well-being of the world. Indeed, artists and designers are often practically skilled individuals whose 'licence to dream' is enviable when observed from within the business community. In this regard we have a responsibility to offer altruistic visions of living styles that would be far more difficult to muster from within the market-driven domain of commercial life. This opportunity has led many of us to seek modes of learning that will help corporations and other institutions to change our world for the better. Within the academic framework we must therefore develop

new modes of thinking and writing that encourage a more responsible mode of creative and intellectual thought. It calls for a reflective and a self-reflexive praxis that is accessible to some of the methodologies of scholarship.

WHAT IS THE IDEAL FORM OF ACADEMIC WRITING?

This reminds us that most scholastic disciplines are in the business of making robustly verifiable truth-claims. This implies that the traditional academic end-point of writing is the publication itself. By contrast, art and design educators may legitimately encourage a greater concern for the particular purpose and outcome of writing. Such a mode of authorship might helpfully emphasize the critical relations between the many pertinent players and games involved. These relations are invariably complex and interdependent. In devising such an outcome-centred approach, it would be important to maintain integrity between each level of involvement. This would encourage a self-inclusive awareness of synergy at an ecological level. This may encourage the learner to balance ethical aspirations with professional imperatives. It could therefore be used as a pragmatic basis for the 'greening' of the curriculum.

WHAT IS THE PEDAGOGIC PURPOSE OF WRITING?

If a significant proportion of highly intelligent and resourceful citizens do not always communicate fluently in a linear, analytical, sequential or declarative way, why do we expect them to learn by writing? In developing a framework for critical practice in design I have argued that academic writing by design practitioners should be holistic and outcome-centred rather than form-centred. As Edward de Bono so irreverently put it, 'academic writing is a triumph of form over content'. However, in challenging a traditional overemphasis on academic (re)presentation we should also acknowledge that, while 'form' may seem less important than 'content', we could say that 'content' should be less important than the wisdom or capability of the author. More pragmatically still, we may acknowledge that, for a professional reader of a given text at a given moment, the author's wisdom or capability may seem secondary to the practical usefulness of his/her recommendations.

TWELVE STAGES OF (WRITING) A DESIGN TRANSFORMATION

How can we build tools that are effective in enabling (unsupervised) creative practitioners with different cognitive skills to organize themselves in a more responsible and self-reflexive way? One effective approach is to map the stages of one's creative engagement so that a

feeling of self-confidence will emerge from incremental achievements. Table 1 shows one of the basic tools developed to exemplify this process.

	Twelve possible stages of design transformation	
	Noticing your idea: Realizing that you are curious about something that seems important to you	*Make notes that list your key interests in the context of your discipline* *Check what you will need* *Have fun with the process*
	Owning the insight: Connecting your idea(s) with previous insights, in order to make it your own	*Add relevant items you already know about* *Look at the result* *Acknowledge that this is now your own idea! (even if it coincides with extant writings you may find)*
	Confirming a context: Confirming the idea's connection to actual issues	*Ask yourself what background circumstances led you to be interested in these ideas* *Make it real* *State the obvious – in detail*
	Letting go: Allowing the writing to (risk) going beyond vision of your idea	*Keep writing notes and checking with other (e.g. library) sources until your text begins to be swamped by what you have added*
	Investing yourself:	*Start to create sections*

	Making sure that your agenda is clearly intact, and that it is integrated within the text's coherent agenda	*Make sure you edit what you have done so that you don't omit the salient features of what you are(were?) most concerned with*
	Revealing the whole: Ensuring the parts work with the whole	*Make the overall structure clear* *Try to establish a synergy in which you declare a key purpose that is elegantly served by the sum-total of every subsection*
	Identifying a reader: Imagining an actual person as holding some version of a question that corresponds with your answer	*Ask yourself 'Now I have got this far…who might want, or need to know what I will soon know?' Make your choice by imagining whether you would find it helpful to write to them as problem-holder, etc.*
	Inhabiting your reader: Sympathetically acquiring your reader's perspective	*Once you have chosen your reader, research their tastes, opinions, and belief system* *Try to imagine how you would think, feel and act if you were in their position*
	Reorienting as reader: Rethinking your idea from the reader's predicament	*Try to reconceptualize your essay's central thesis so that your reader would understand it*
0. 0	**Communication to reader:** Elucidating your text to/for your reader	*Create a narrative structure in which the reader's predicament is included* *Make sure that the essential things*

		your reader does not know placed in the best order
		Try to make it plausible and desirable for your reader
1.	**Inviting transformation:** Offering relevant reader-centred practical advice	*Convincing your reader of an argument may not be enough* *Ask yourself how you would advise them to act on your advice (assuming they agree with you)*
2.	**Ensuring transformation:** Taking the text into a more active design phase	*Follow through to make sure that your reader can resource and sustain a transformative approach*

Table 1. Twelve stages of design transformation through writing

THE RELEVANCE OF DYSLEXIA

One thing we know about dyslexics is that – by definition – they have a higher than average intelligence. Often, they think in a visual and inventive way that is more holistic and therefore less linear than static narrative argumentation. If so, perhaps the dyslexic's 'confusion' is symptomatic of an intelligent refusal to reduce complex systems down to isolated facts. If so, our society may have overlooked many opportunities by its reluctance to see dyslexia as a capability, rather than as a disability. Over the last three years on the MA Design Futures programme I have sought the approval of each cohort of students to assume that dyslexia carries a latent positive potential, and that it might be helpful to assume that we are all dyslexic. This approach has been useful in that it has stimulated a revision of the values implicit in what, and in how we learn. It may also, I hope, prove to be a prudent step in addressing the spirit of the Government's ongoing legislation (since September 2003) that includes dyslexics in its disability provision.

WE NEED METHODS THAT ENCOURAGE RESPONSIBLE AUTHORSHIP

How can we devise tools that are effective in enabling (unsupervised) creative practitioners to organize themselves more self-reflexively, effectively and ethically; and that enable users to offer feedback to themselves? Encouraging busy creative practitioners to reflect deeply upon their actions is a difficult task. Whilst most have to collaborate with others, some prefer to work in an individualistic, subjective, conceptual, holistic, generative and visual way. Encouraging such a group to work in a more strategic and ethical way usually entails critical (self-)reflective writing. Arguably, they need an adaptable system that will help them think more imaginatively, contingently, relationally, and responsibly whilst meeting targets and deadlines. I have tried to develop an approach that encourages students to visualize their intentions with greater clarity. The research acknowledges the prevalence of cognitive differences (i.e. learning styles) that discourage some creative practitioners from using writing to augment their thinking (Graves, 1999; Padget, 1999).
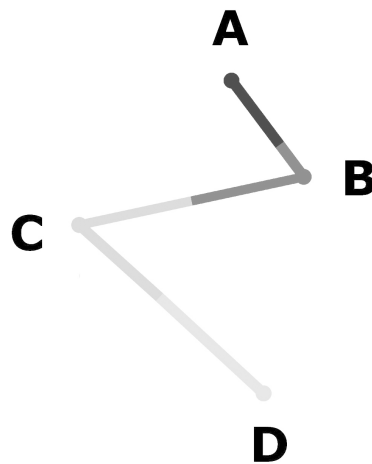
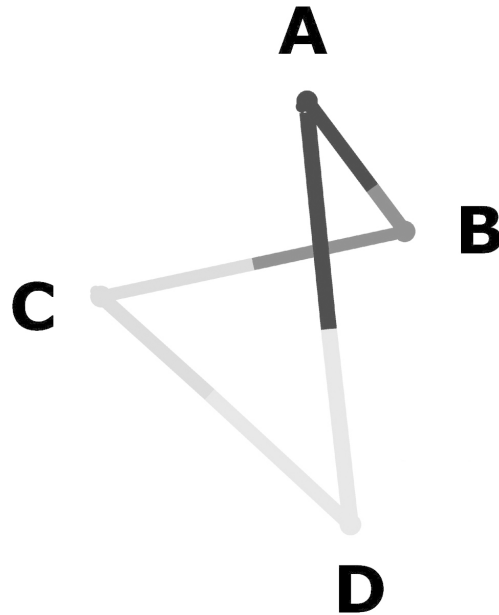**Figure 1. A diagram depicting a narrative sequence**

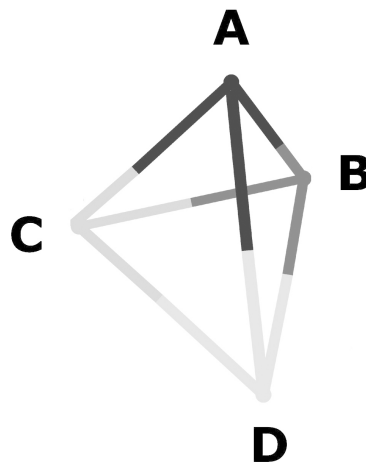**Figure 2. The beginning and end of the narrative are joined**

Figure 3. Key relations between the narrative elements are shown

THE NEED FOR A LESS NARRATIVE-BASED MODE OF WRITING

As I indicated, the academic traditions of writing tend to regard the reader as a vaguely
defined critical presence with non-specific interests and needs. Nevertheless it also

emphasizes the rhetorical aspect of writing in which the author must strive to persuade the reader of the veracity or authenticity of what is claimed. This implies that the author has already attained a sufficient understanding of relations that are pertinent to his/her theme or topic. In my experience, many dyslexics have taught themselves to manage this task when the document size is small enough, but they become increasingly confused when it goes over their preferred limit. This may not be a serious problem. I have argued that the need to tell a story in the 'best' sequence for your reader is secondary to the ability to clarify a non-sequential set of relations that can be reorganized into a different order for different readers and situations. For example, Table 2 shows a relational map of this article that includes four 'players'. This raises the question as to what might be an optimum three-dimensional topology for managing this task.

How tetrahedral logic applies to this article	
Author	Me (experienced teacher of artists and designers)
Reader	You (e.g. a teacher of creative practitioners?)
Proposition	Argumentation (that the form of academic writing needs redesigning)
Context	The world (what it needs from the way we teach design graduates)

Table 2. The four interrelated standpoints implied by this article

What might be an optimum structure of writing that would generate an appropriate understanding in order to inform the later process of reader-centred narration? As four is, arguably the most convenient and generative number, one of the forms I encourage my students to use for mapping relations is the tetrahedron (see Figures 1–4).

Figure 4. - a colour-coded tetrahedron

SOME TECHNICAL POINTS ABOUT THE TETRAHEDRON

The tetrahedral form has many advantages over other forms in that – arguably – it is mnemonically and conceptually optimal (Wood, 2003). Leonhard Euler (1707–83) noted that all polygons share a common relationship between faces, edges and vertices (i.e. Vertices + Faces = Edges + 2). From this it can be shown that the tetrahedron offers a unique richness of adjacency. Richard Buckminster Fuller took this argument further and made some intriguing, if extravagant theories about its importance to the universe, as we perceive it. Notably, he claimed that the mind is tetrahedral (see Fuller, 1949/1969). Certainly we may agree that by exemplifying the interrelatedness for independent entities (e.g. nodes) we have a three-dimensional form with the maximum number of directly interconnecting points (i.e. four). Arguably, it is such a versatile and handy configuration that is optimally mnemonic. It therefore offers an ideal format for visualizing relations.

PLATO'S TETRAHEDRAL DRAMA

From the diagram in Figure 3 it is clear that the four nodes (i.e. A, B, C, and D) have six links:

i.e.   A to B
        A to C

A to D

B to C

B to D

C to D

Plato's script for *The Gorgias* is a double dialogue in which the four main characters are able to relate to each of the other three in the group. If we visualize this in terms of the six possible dialogues, we may be tempted to depict it as either a linear sequence or as a three-dimensional figure. In a sense the three-dimensional version is more coherent because it maintains the integrity of all of its six possible relations. Once a non-linear structure is fully comprehended or embodied, cognitively speaking, it can be unravelled or fragmented as a narrative, or part of a narrative. Although we have been discussing a very small number of component parts – in this case, four – the form of the tetrahedron can be used as a basis for aggregating four-fold arguments within larger structures of presentation.

PLATO'S (IMPLIED) TETRAHEDRON IN THEMATIC REPRESENTATION

This may raise the question as to what could be an essential grammatical form for expressing the relational features of design practice. How can we visualize the idea of a generic design logic and grammar? This could be helpful to dyslexics who may be more able to think in three or four dimensions than many of their more literate colleagues. There are many configurations that have already proved helpful to our students. One such approach is represented in Figure 5, in which the basic elements of designer, client, designed product and context are established as a minimum logical space. The tetrahedron reminds us that this configuration implicates six primary relations that can be visualized as four interconnected players. For our purposes this can be identified as four roles that can be 'played against' or 'empathized with', in turn.
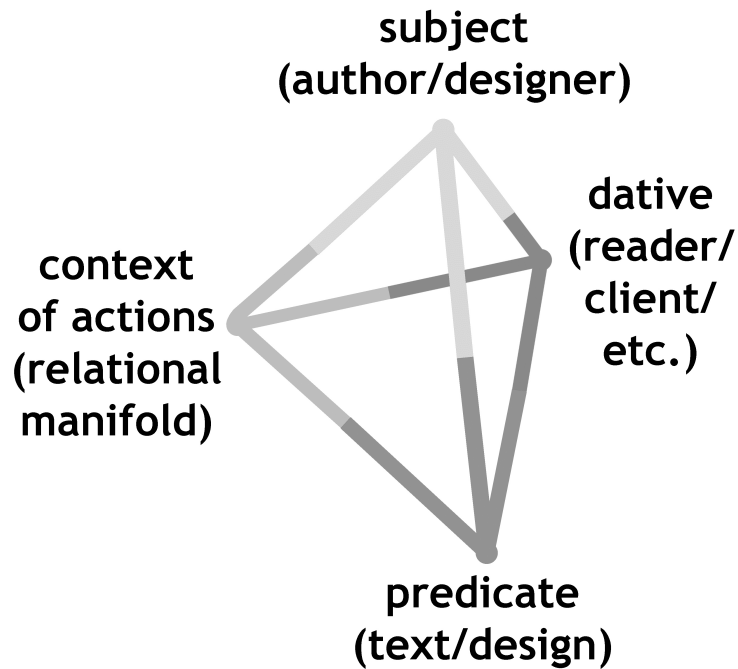
Figure 5. A four-fold grammar of design as vertices of the tetrahedron

USING THE TETRAHEDRON IN A THREE-STEP SEQUENCE

If we choose the tetrahedron out of convenience, this enables the designer to empathize with each of four roles. S/he may, for example allocate two nodes to his/her own role. One role might be allocated to his/her personal self and the other to his/her professional self. In this way, a practitioner can meditate on his/her private beliefs in order to make them explicit. This mode has proved useful for the early stages of designing. Once this is accomplished s/he can read and reflect upon his/her professional role and how it can be reconciled with his/her private ideologies and agendas. I do not suggest that there is any 'right' or 'wrong' way to use the system. However, the following example of a three-step approach has shown itself to be useful and easy to use. As self-aware authors we cannot avoid acting as our own readers. In practical terms, the idea of self-reference is misleading unless we acknowledge that what we may casually connote to be a single entity (i.e. the self) is in practice a manifold set of agencies that remain coherent by virtue of an internally hallucinated field of 'others'.

STEP 1

In Step 1 (see Table 3), the author seeks to get in touch with his/her personal wishes and relate them to his/her potential role as a skilled design practitioner.

The tetrahedron in 'Step 1' mode: 'Altruistic envisioning'	
Author	Personal self (me, getting in touch with an altruistic vision)
Reader	Professional self (as an enterprising and skilled practitioner)
Idea	(the critical proposition I want to develop)
Large context	Everything/anything else (the ecosystem and/or society and what it really needs)

Table 3. Step 1. Reconciling personal and professional standpoints

Following the simple logic of this figure, and how the vertices of a tetrahedron connect to one another, this configuration can be shown to have six direct connections between each vertex. If we can acknowledge the directionality of these connections there are obviously twice this number. The following example is only one interpretation that could be made:

The twelve standpoints implied by Step 1		
Author	…how s/he wants to guide the…	Reader
Author	…and how s/he understands/develops the…	Idea
Author	…and how s/he understands/selects from the…	Context
Reader	…and how s/he can adapt to the…	Idea
Reader	…and whether s/he will recognize the selected…	Context
Idea	…and how well it seems to fit into the…	Context
Reader	…and how much s/he will be able to respect the…	Author
Idea	…its potential and what it means to the…	Author
Context	…and what further ideas it may offer the…	Author

Idea	…its relevance to the predicament of the…	Reader
Context	…and how much it may resonate with the…	Reader
Context	…its potential for development of the…	Idea

Table 4. Interpreting relationships (edges) between standpoints (vertices)

STEP 2

In Step 2 (see Table 4) every pathway defined as above can be seen as a question, or as an opportunity to reflect on its status and to write something down. Obviously, some pathways will be more useful than others but the results can be surprising when used by creative individuals and groups. Once the author has developed a satisfying rapport between his/her personal and professional self, s/he may care to redefine the four nodes as follows:

Using the tetrahedron in Step 2: 'Professional rehearsal'	
Author	Myself (as an enterprising professional)
Reader	My client (as a problem holder or vital resource manager)
Idea	(the significant proposition I am formulating)
Context	Everything else (the world and how it currently works)

Table 5. Reconfiguring the standpoints to adopt a professional standpoint

In Step 2 (see Table 5) the order is redefined to take away the author's first role as a 'personal self', leaving him/her with his/her role as a professional. This means that s/he should already have assimilated his/her personal beliefs into a professional strategy during Step 1. The node that was previously occupied by the 'personal self' is now filled by the role of a client or problem-holder who will work with the 'professional self'. By this stage the idea will have been developed in the context of the other three items. This suggests the following twelve links between the four nodes (see Table 6).

Twelve perspectives implied by Step 2		
Author	…how s/he wants to appear to the…	Reader
Author	…and how s/he can offer and develop the…	Idea
Author	…and how s/he can work with the…	Context
Reader	…and how s/he can adapt her skills to the…	Idea
Reader	…and whether s/he will recognize the selected…	Context
Idea	…and how well it seems to fit into the…	Context
Reader	…and how much s/he will be able to respect the…	Author
Idea	…its potential and what it means to the…	Author
Context	…and what further ideas it may offer the…	Author
Idea	…its relevance to the predicament of the…	Reader
Context	…and how much it may resonate with the…	Reader
Context	…its potential for development of the…	Idea

Table 6. Interpreting the relationships between standpoints in Table 5

STEP 3

In Step 3 the idea is more resolved, having been developed in note form that corresponds
with the three-dimensional model of the tetrahedron, rather than as prose in a certain linear
order (see Table 7). With this third step the author adopts the role of the client in order to
rethink what s/he has been advocating and to find out how acceptable it will look when
presented to the client. The 'context' is narrowed down to offer a much more pragmatic
scenario that is less idealistic and much more driven by the imperatives of the market
situation, or its equivalent. This might work as shown in Table 7.

The tetrahedron in Step 3: 'Re-thinking your proposition'	
Author	Myself (in the past – i.e. having written notes in Step 2)
Reader	Myself (now – i.e. as though standing in my client's shoes)
Idea	(the critical proposition now formulated)

Context	Resources
	(money and other conditions, constraints, and opportunities)

Table 7. Reconfiguring the standpoints to empathize with the reader

In formulating the twelve possible links between the four nodes (see Table 8), much of the work has now been done, and this process serves to evaluate whether the client is likely to recognize the author's recommendations, and to find them acceptable and useful.

Twelve perspectives implied by Step 3		
Author	…and how credible s/he would appear to the…	Reader
Author	…and how s/he seems to have developed the…	Idea
Author	…and how s/he has worked with the…	Context
Reader	…and how likely s/he would be to accept the…	Idea
Reader	…and whether s/he would recognize the…	Context
Idea	…and how well it seems to fit into the…	Context
Reader	…and how much s/he feels able to respect the…	Author
Idea	*(too late to make much difference)*	Author
Context	*(too late to make much difference)*	Author
Idea	…its relevance to the predicament of the…	Reader
Context	…and how much it may resonate with the…	Reader
Context	…its potential for development of the…	Idea

Table 8. Interpreting the relationships between standpoints in Table 7

THE FINAL (NARRATIVE) DRAFTING STAGE

Once all of the (relevant) links and nodes have been described in full, the author can use the
system in role-play exercises with a colleague who can become an 'active listener' on his/her
behalf. Once this process is established, the roles in Step 2 would probably be suitable. At this
point the author is probably now well prepared to work from the notes prepared in Steps 1, 2,
and 3. This process tends to help students to be more decisive and confident in choosing a
specific reader-friendly narrative path through the tetrahedral space.

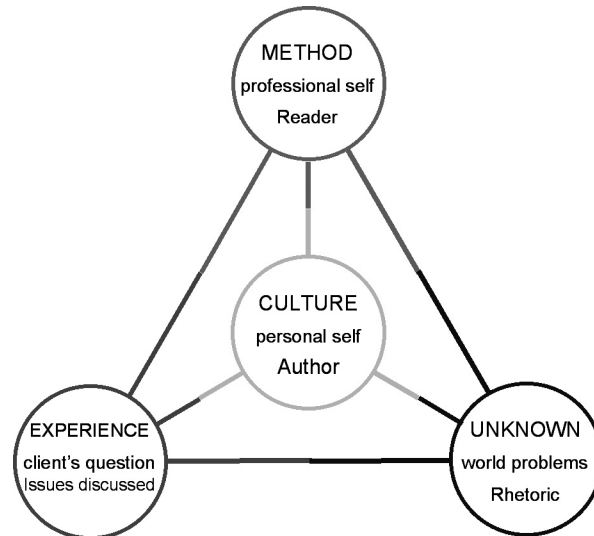## HOW SOME STUDENTS HAVE ACTUALLY USED THE TETRAHEDRAL METHOD

Figure 6. The tetrahedron as used by student A

Figure 6 is a diagram borrowed from an essay (student A) on what she calls 'design illness'. Here, she has used the tetrahedron to map out her case in a self-inclusive way. (*Please note that all diagrams used in this article were originally colour-coded.*) She then used it to guide her inquiry into a critique of cultural chauvinism within a certain lifestyle journal. As a Japanese student she has chosen to link her personal perspectives with the cultural issues that interest her. This is made clear by containing both within the circular node entitled: 'CULTURE – personal self – author'. Similarly she has attached her education and experience as a professional graphic designer with specific questions framed by the client, or reader. Displaying both themes within the circular node evidences this: 'EXPERIENCE – client's questions – issues discussed'.

In another essay (student B) the tetrahedron was used in two different ways – relationally and thematically. In her introduction she has *implied* the tetrahedron by identifying the four relational components of the essay: author, reader, proposition and context. In fact, she uses two readers, one who was currently accessible and the other who was not. In '*writing-as*' what she calls 'An Awkward Space Consultant' (author) she has designed her document to work *for* a specific 'internal' reader' (Professor Phil Jones, an environmental engineer). His assigned role was to read on behalf of an 'external' reader (Cecil Balmond, an engineer) whom, at that time, she had been trying to reach without success. Her essay title was

designed to guide her inquiry through to a question of practical design feasibility. 'Is it Possible to Decipher the Chaos of the City through Analysing the Dynamic of an Awkward Space, thus, revealing a Future Design Knowledge?' In this case the context of her essay was declared as a disciplinary field that provides a backdrop for the whole study. It is framed in the essay's subtitle: 'Knowledge and Communication'.
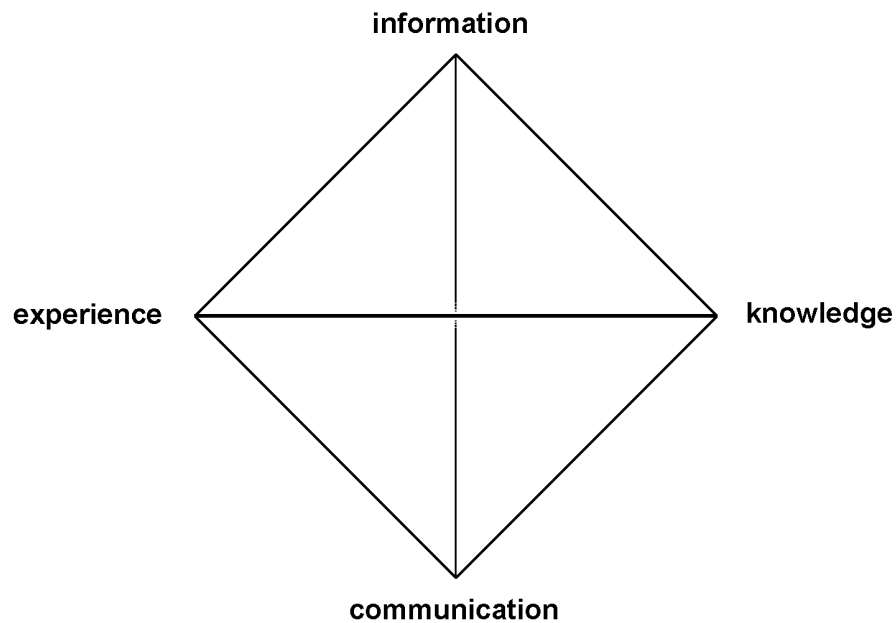

Figure 7. Student B's use of the tetrahedron for mapping her essay layout

The student also used a thematic diagram (see Figure 7) to help the author and reader to grasp the non-linear organization of chapters, despite the document's clearly linear structure. This is how this student introduced her reader/s to her selective use of the diagram:

The structure of the essay is based on the tetrahedron above. The essay opens with a preface that presents the reader with a collection of definitions and an exploration into awkward space. The definitions are small tastes of information. This information then becomes enriched with the piece of writing on awkward spaces and their uncanny quality. From this information, the essay then moves on to discuss the experience of the awkward space consultant, outlining their role in the design process and highlighting their investigative techniques. The author then addresses the reader, engineer Cecil Balmond, sharing with him her knowledge of awkward space. The final part of the essay sees the author make a presentation of a space

that they are working on to communicate ideas for the role of awkward space as a random start point for the generation of new design knowledge.

Note

References

Cairns, T. and Moss, W. (1995), *Students with Specific Learning Difficulties: Dyslexia in HE*, Goldsmiths College Report.

Cooley, M. (1987), *Architect or Bee? The Price of a New Technology*, London: Hogarth Press.

Fuller, Buckminster (1949/1969), 'Total Thinking' in R.W. Marks (ed.) *Ideas and Integrities: A Spontaneous Autobiographical Disclosure*, Englewood Cliffs, NJ: Prentice-Hall

Krippendorff, K. (1996), 'On the essential contexts of artefacts or on the proposition that "Design is Making Sense (of Things)"', in V.B. Margolin and R. Buchanan (eds), *The Idea of Design*, London: MIT Press, pp. 156–86.

Schön, D. (1985), *The Design Studio*, London: RIBA Publications.

Wood, J. (1993), 'A Hypertext Environment for Researchers in Art & Design', paper given at 'Hypermedia in Vaasa' conference, Finland.

Wood, J. (1994), 'Chaos and the Virtual Library – strange attractors in the design studio', paper given at 'IDATER '94' conference (International Design and Technology Education Research) at Loughborough University, Leicestershire, UK.

Wood, J., (1995), 'The idea of academic rigour in 4-D space', paper given at the '4-D Dynamics' conference, Design Research Society, De Montfort University, Leicester, UK, September.

Wood, J., (1997), "Situated Criticism and the Experiential Present", in the special "Criticism" edition of the Journal of Design Issues, ed. Prof. Nigel Whitely, Vol. 3, no. 2, Summer 1997. ISSN 0747-9360, p.p. 5-15.

Wood, J., (2000), 'The Culture of Rigour', *Design Journal*, April 2000.

Wood, J., (2004), 'The Bureaucrat Gene; The Evolutionary Purpose of Dyslexia' in O. Lowenstein (ed.), *Fourth Door Review*, Lewes, August.

Wood, J. and Clarke, M. (1990), *Browsing for One's Own Ideas*, Kings College Computing Centre publication (Autumn Collection).

Wood, J. and Taylor, P. (1997), 'Mapping the Mapper', in D. Day and D. Kovacs (eds.), *Computers, Communications, and Mental Models*, London: Taylor & Francis, pp. 37–44.

Author contact details
John Wood, Emeritus Professor of Design,
Goldsmiths University of London,
Lewisham Way, London SE14 6NW
E-mail: maxripple@gmail.com