

READING, LEARNING, AND 'TEXTS' IN THEIR INTERACTION WITH THE DIGITAL MEDIA

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Questions

How do we 'read' when we read in the environment of the digital media? How do we approach and engage with entirely ordinary, usual 'objects' such as those shown in the screen-shots below? What 'tools' can help us understand the changes in "reading" which have taken place over the last two or three decades, changes which have made such objects entirely common, and, for very many people, especially 'the young', unremarkable, common-place, normal? What practices and habits of reading do they produce? And what effects might we expect these to have, in all kinds of different ways, and, prominent among these, on 'learning'?

It needs to be said at the outset that there is no unified "we". *Generation*, as a new social category (the social shaping of chronological *age*), brings with it a clear difference between 'readers' and 'text-makers', broadly those below the ages of 25 – 35 and those above: those who have experienced the impact of the digital media as young people, and in school, and those who have come to these media later. This difference encompasses and goes beyond other social differences, such as gender, 'class', etc.

A closely related point is that of the shape of the contemporary landscape of reading. The present period is unusual – among many other things – in the co-existence of forms of texts which have changed very little over the last five or six decades, with forms of texts which were entirely unknown even two decades ago. Many of the 'texts' which appear on the sites of the digital media are not 'readable (aloud)' in the way that someone of my generation would have considered as 'reading': literally, they cannot be spoken out

loud. On many '(web)sites' the new forms co-exist with texts which still have significant features of the traditional; in between is an infinitely variable range of admixtures of features of the traditional and the new.

For instance, a 'homepage' may be organized by principles characteristic of the new kinds of texts (see Fig 1); yet when I click on a link that will take me to pages 'further in' (see Fig 2), I find texts which have features which seem comfortingly traditional – or near enough in any case.

Nevertheless, the ever-expanding presence of the media of the screen – tablets, laptops, smart-phones, etc. – combined with 'generational creep', ensures that the 'new texts' are inexorably gaining ground. Already they are changing the communicational world and they will have re-shaped it out of recognition within another decade. The 'new text' that I have chosen as my example is entirely usual. It allows me to make my main points, aware that there is a potentially infinite range of variants between it and 'traditional' texts; but aware that there are two distinct principles at work, those of the 'new text' and those of the 'traditional text'. I feel certain that the former will win out in shaping the communicational world.

Many of the 'texts' which appear on the sites of the digital media are not 'readable (aloud)' in the way that someone of my generation would have considered as 'reading': literally, they cannot be spoken out loud



Fig 1 Screen shot of the Homepage, NHS (National Health Service) England:
<http://www.nhs.uk/Pages/HomePage.aspx>



Fig 2 Screen shot of a page in the NHS Website

In the meantime, even now a teacher's simple instruction to her class, "start reading", is becoming ever less fitting, more problematic, likely to produce consternation. In many sites it is already vaguely quaint or simply impossible.

The example serves to make the case and establish the points about the changing world of reading – and of learning. In its 'ordinariness' it allows us to speculate on causes and show the far-reaching effects of the changes in health forms and practices.

'Reading' then and now

The sketch here presents a *frame* for thinking. It presents principles, factors, categories, which can help to think productively about 'reading' in the era dominated by the digital media and help in understanding what is going on. It might provide ways of getting beyond mere puzzlement or frustration with a world that is getting ever stranger for older generations; and give us some understanding of younger generations and their inability, unwillingness or (seeming) incomprehension to read in ways that some – especially those with power: politicians, parents, employers – might think they should.

In its entire interconnection with *learning*, 'reading' is a hugely significant factor in the formation of

identity; if we misunderstand, overlook or ignore that connection we do so at great cost. In reading, "that which is to be read", we engage with a part of the world. In transformative engagement with "what is to be read" we interpret / re-shape what we are engaging with using our existing (inner) resources: we fashion 'our own' meaning, and change our 'inner' resources. In that process we change, in the minutest ways, unrecognized even by ourselves. In transforming that which we engage with, we are transforming our resources and re-shaping our identities.

I pay attention to three factors: to changes in compositional principles, to kinds of cohesion and coherence, and to the availability and use of resources for making meaning, particularly the use of modes

Reading, learning and identity, are entirely interwoven, at every point.

In looking at reading here, I do so with a narrow focus: avoiding a wide range of issues: matters of pace; of the ceaseless training of attention; of effects on knowledge; of genres; and so on. I pay attention

to three factors: to changes in compositional principles, to kinds of cohesion and coherence, and to the availability and use of resources for making meaning, particularly the use of modes.

Questions around the interrelation of learning and reading usually focus on the school. Yet this goes well beyond the school, to all sites and occasions of social life where learning – in a much extended sense – happens. So a large question is: "How are these newer forms of text and the associated practices of reading reconfiguring the social world?" We need to have a sense of what 'reading' is, now, how we relate to it, and how ideas of how we 'read' are remade. This in turn will effect what we think learning is, and how contemporary forms of texts remake the ways in which we learn and what we learn.

I hope that my examples and the principles will 'translate' usefully to other sites of the 'new media', and to wider 'European' environments. These are common principles, which, however, *always* occur in specific form in any local setting.

What are the combined effects of social change on the one hand, and of the changes in means of representation and means of dissemination/distribution on the other?

Consider Fig 1., a screen-shot of the homepage of the National Health Service (the NHS) in England. If I say to a friend who has been telling me about a persistent pain: "Oh, have you read (up) about it on the NHS website?" what, actually, do I mean by "reading"? How is this 'page'/ 'screen' to be read? What is there 'to read'? How does the meaning of 'reading' here, now, differ from what it might have meant some thirty years ago, when my friend might have gone to a book on (let's call it) 'Health in the family'?

A frame for thinking with: what do we need to be consider?

The social environments of reading

In thinking about the effects of digital media on reading and learning *now*, my first step is to look at social factors. I know that the debate tends to be focussed much more on the technologies and appliances of digital environments. Yet in this frame

here, the social is prior. It is in social settings, in social actions and interactions, where meaning is made; and it is there that the uses of the new media are shaped.

The second step is to focus on the *means* for *making* meaning, that is, a focus on the cultural resources that make meaning available to me in material form. In the screen shot of Fig 1 we see a, by now, common *multimodal* landscape of communication. Writing may be the major means of making meaning there, it is clear that meaning is also made with *image* (as photograph, or as diagram or drawing), with *colour*, and as combinations of these, in specific arrangements / layouts.

The third step is to look, with equal focus, on the means for *disseminating* / *distributing* meaning – the media. Does it make a difference that this is a website and not a printed book, or a set of leaflets? The resources which give me *access* to these meanings – the *media* and the *appliances* of the digital era (smart phones, laptops, tablets, and so on) have their effects on meaning. A 'visit' to a website differs from attending to a tweet, or visiting Facebook, in ways which are significant.

Now I can ask the question "what are the combined effects of *social change* on the one hand, and of the changes in means of *representation* and means of *dissemination/distribution* on the other?" Together these have shaped and continue to shape the core of the present *semiotic landscape*, the *landscape of meaning*. Having sketched the contours of that landscape with a broad brush, I can now focus on what I am most interested in here: on 'reading' and on learning. "What is 'reading', *now*; what is it like for any one individual in the many various sites and occasions of everyday life?" "What effects does it have on and for learning?"

One last item in this tool-kit is an apt theory of communication. The *traditional* approach says (in one of very many variants) "Communication is an event where a sender constructs a message, using a 'code' (assumed to be) shared with an addressee, and, sends the message to the addressee as a 'receiver'. The latter 'decodes' the message". In that conception the focus is on the sender, on the shared code, and on successful *decoding*. My definition turns that on its head. It says "Communication has happened when there has been *interpretation*". Now the focus is on the *interpreter*, and on *inter-*

pretation. It is a change in focus and in relations of power. Before, the sender had the power to shape the message; it had been the receiver's responsibility to 'decode' that message appropriately. Now, the person who chooses to engage with the message makes her or his interpretation; and it is the process of interpretation which means that there has been communication.

This amounts to a radically different distribution of power: both the initial maker of the message (the 'sender') and the interpreter make meaning. It is the latter's action that guarantees that 'communication' has taken place. This is crucial in understanding 'reading' in the present landscape of communication. (If we imagine the 'interpreter' to be a student, the force and effect of this becomes evident). It requires a focus on two questions: on one hand "What is that which is to be read, like?" and "How does someone interpret what they have selected, from 'that which is to be read', in the light of their own experiences, their own resources, their interest?" Overarching both is a more complex question: "how do we approach reading *now*, when we no longer focus on the authority of the (author/) sender, when maybe we cannot assume a shared code, and when we need to focus on the reader's *interest*?"

In many ways, that last question underpins the reality and the dilemma of contemporary schooling – and of reading beyond that.

The links in the traditionally produced text lead to an internally tightly coherent unit; in the digitally made (and displayed) text, the 'digi text', the links tend to point 'away', 'outward', to a larger field

In the case of the NHS website, the matter of *interest* is obvious. Someone has some problem, and he or she is looking for help with that problem. That is why it might serve as a useful metaphor, a way of seeing 'reading now', which applies not only in this fairly obvious case, but in all cases: *my interest, as 'reader', is decisive*.

If we wish to deal with reading in relation to 'learning *now*', these are essential questions. All aspects of "that which is to be read?" are fundamental to learning: whatever the relations of power in commu-

nunicational settings are, they shape what learning is, what it can be, and how it can happen.

The frame: form, and social factors

I assume that "the *form* of what is to be read, mirrors social givens. This *form* provides the foundation for meaning *and* it shapes who we are; it shapes our identities as social beings".

To explain: the text which I am writing at this moment, is traditional / conventional in its form. I'll refer to it as a 'trad text'. Its fundamental organization is *linear, sequential*. It is organized by sub-sections, each with its heading; within the sub-sections there are paragraphs; these are composed of sentences. In the 'trad text' overall there are *links* to other parts of this text: they link components across the whole text ("As the last piece in the tool-kit..."); there are elements that link across paragraphs within the subsections ("This then enables me to focus...") and across elements within the paragraphs ("...changes in means of *representation* and of Together these make up...").

By entire contrast, the text in Fig 1, is *not linear*: it is *modular*. I'll refer to it as a 'digi text'. It is composed of 'modules'. The text overall has no sub-sections and no headings. It is not organized like the 'trad text'. There are no paragraphs. Inside the *modules* there are 'headings': but while the headings in the 'trad text' serve to link and organize the whole text, the headings inside the modules function only within the module; they do not reach across the text.

Both texts have 'links'. In the 'trad text' the 'links' work to connect elements *inside* the text, they tie different parts of it together, producing coherence in the 'trad text'. In the 'digi text' of Fig 1, the 'links' (in blue) tend to refer 'away from' the 'screen'/'page'/text, they point 'away from', *outside* the 'digi text' to other texts, either within the same website or else 'pointing' to a larger textual field around the 'digi text', to a field constructed as a 'network' in which the 'digi text' is located.

If I wish to use the links to access 'what is linked', I have to 'activate' them by clicking on the link. The materials are not present in the text in the way footnotes are, or a bibliography is

The links in the traditionally produced text lead to an internally tightly coherent unit; in the digitally made (and displayed) text, the 'digi text', the links tend to point 'away', 'outward', to a larger field. They are means to *connect it with* and *locate it in* a network. They do not lead to or strengthen internal cohesion, they do not produce coherence

The 'trad text' – such as the one I am writing here – is, relatively self-contained. There may be a bibliography at the end, which points to related texts. It does so to show what materials the 'trad text' 'draws on', as 'authorities' in an often hierarchically conceived relation. The 'digi text' 'points to' (rather than 'draws on') related texts in a '*network*', rather than in a '*hierarchy*'. The 'digi text' exists in a differently conceived, differently organized, and much more loosely constructed field, presented as a *network*.

Both kinds of text can be taken as metaphors (of conceptions) of the social world in which they exist.

The modules of the 'digi text' are not connected by conjunctions – 'ands', 'buts', 'however' – nor by the kinds of textual links I have pointed to in the 'trad text'. Nevertheless the 'digi text' does have aspects of *integration* and (kinds of) *coherence*. However, its means for producing these differ entirely from those in the 'trad text'. In the 'trad text' the resources used for constructing integration and coherence are *linguistic*; in the 'digi text' they are *visual* rather than *linguistic*. The 'new texts' are organized by means which treat them as (quasi) images. A *colour palette* is used to suggest *connection*, a kind of 'belonging together'. The spatial means of *layout* – rather than of *syntax* – are used to produce a loose ordering, as an '*arrangement*'. If I wish to use the links to access 'what is linked', I have to 'activate' them by clicking on the link. The materials are not present in the text in the way footnotes are, or a bibliography is.

You, as the person who engages with the text, are expected to make choices about how to enter and engage with the text, making choices which correspond to your interests

The means of establishing coherence in the two texts are entirely different and so are the *kinds* of coherence. Each of the two kinds of organization / arrangements point to, realize, and instantiate different

kinds of *social relations* of initial producer of text (as 'author?', as 'an authority?') and of the person who engages with the text (the "reader"?). One is *linear/hierarchical*; the other is *modular*; with 'layering' or with 'adjacent' elements; 'co-located' and 'linked' in a network. Each suggests specific differing social assumptions: such as expectations about duties, rights, responsibilities of each party in this structure.

In the linearly arranged 'trad text', the author is meant to construct coherence 'for' the reader. It is clear where and how a reader should enter the text; the author has designed the text for the reader: the author has done specific '*semiotic work*' for the reader. Implied in this organization is a statement, something like: "I have (been given) the authority to assemble 'things to know' on your behalf; I have arranged them in a carefully designed order. I have done this work on your behalf. I expect that you, for your part, respect my work and strive to recover the meaning in the manner, and with the ordering, that I have provided".

None of these assumptions or expectations apply to the 'digi text'. It suggests social assumptions such as: "We, the design team, have done work on your behalf. We have researched, taking note of the wide diversity of backgrounds of a possible audience for this text, considered their likely experiences, social positionings, age, gender, and so on. We suggest that the things we have assembled are connected: we have used a colour palette both to appeal to a shared 'taste' and to suggest connectedness. We have arranged the modules to make it easy to engage with this text, but we have not wished to, nor would we have been able to suggest 'the' way of entering and engaging with this text. That, after all, is up to your individual interest. You, as the person who engages with the text, are expected to make choices about how to enter and engage with the text, making choices which correspond to your interests. In this way, each 'visitor' to our 'site' designs a coherent larger unit in relation to their interest, and designs the overall shape of what becomes *their* text".

In the traditional text the author remains in charge of *the manner of engaging* with the text; in the modular text the person engaging with the text – the 'reader' – is in charge. The modules in total are meant to provide a satisfactory range of choices for likely 'visitors', and the arrangement should allow ready choice of a module for entry by the imagined audience.



The difference in form and organization is clear. It leaves two questions: 'are the differences in form likely to lead to differences in practices of reading and of a sense of what 'reading' is?' and 'is the difference in form just that, a difference in form, or does it point to, or correspond to social differences?' I think that we can safely make hypotheses about the kind of 'social' imagined in the 'trad text': an integrated, coherent, structured society, with individuals who share certain sets of assumptions about rights, privileges, responsibilities. With the 'digi text' we are entitled to form different hypotheses about the imagined 'social' which has given rise to and is suggested by this arrangement: 'visitors' as ('consumers' / clients') with diverse interests, backgrounds, needs; less *drawing on* or *integrated into* a community than sharing a loose sense of *affinity*, with no clearly articulated assumptions or organization.

Multimodality, the phenomenon that texts, as well as their modular elements, consist of several modes at one time, is a fundamental compositional principle of the 'digi text'

In the 'digi text' the 'reader' / 'visitor' is not just free to choose, but is obliged to choose. 'Visitors' / 'readers' select their own entry point to a complex text; the links in this 'digi text' take them either further into the 'site' for which the home page is the portal, or take her or him outside the homepage and the website to another site in the larger network.

In this section – as throughout the article – I have vacillated in my use of terminology. I am not clear whether to use the term 'page' or 'screen'; I use the spatial term 'site' ('web-site) which someone 'visits' rather than 'reads'. It reflects my sense that existing terms – author, reader, page, text, writing, etc – no longer aptly name the new 'landscape of meaning' (itself a term that would not have been used fifteen years ago), while the new terms gloss over and obscure more traditional and still active features of this landscape.

Compositional principles, multimodality and design

The compositional resources and principles of the 'digi text' are, most usually, 'modules'. These may consist of writing alone, though more frequently they consist of a number of resources for rep-

resentation, that is, different *modes*: writing, image, colour. *Multimodality*, the phenomenon that texts, as well as their modular elements, consist of several modes at one time, is a fundamental compositional principle of the 'digi text'.



Fig 3 A module in the 'digi text'

In the module shown in Fig. 3, *colour* is used as a means of providing *coherence* – as *background* – for the module. Within the screen/ page/ text over-all *colour* provides *salience* by making the module visually distinct in the overall arrangement; and it is a further possibility that this particular colour may be supplementing the meaning of the module overall. This module is not a paragraph; nor is it a sub-section of a text: it functions as an element of the larger text. Internally, it has its own headline / superscript. If we were to use the concept of *mode* as a term for 'a resource for *making meaning material*' we could say that this module – like most – is *multimodal*. That is, its meaning consists of the totality of the meanings made jointly by all the modes there. In terms of 'reading' it makes us aware of a quite new dimension, namely that most texts (or sub-textual units, such as *paragraphs, modules*) especially those on portable screens, now consist of combinations of modes: writing, image of various kinds, colour, layout.

That moves thinking about 'reading' well away from texts which (seemed to) rely on writing alone. It introduces the new dimension of *design*: when there are several resources for realizing the meaning of a text, consideration moves from someone's *competence* in the use of one mode or several modes, to the capacity for *design*: to choose resources according to considerations of the text-maker and of the audience. We have moved from 'competence in writing' to the 'capacity for design'.

Behind that stands a rhetorical disposition toward 'composition'. The rhetor asks: "what do I wish to communicate?" "who is this for?", "what resources are available for communication?" "what, and which of these resources is best for communicating which part of the overall meaning?" the answers to these (usually

unstated) questions form the basis for the design of the message by the designer. This is so both in the initial production of texts, and in the subsequent re-making of the text in its interpretation / transformation by the person who engages with the text: the relevant notion now is not simple *competence*, but the capacity *for and of design*. From that perspective, 'reading' now needs to be seen not simply as interpretation, but as the transformational process of (re-) design.

The (generationally appropriate) 'readers' of the contemporary 'digi text' not only produces their coherence in the way indicated, but are also called on to interpret the coming together of different modes as a meaningful ensemble. In the digital era, 'reading' is the interpretative, transformative process of (re-) design. If we think of a student in school as our imagined 'reader', it becomes evident that this changes their status profoundly. It goes without saying that if we were to regard this as a plausible account of 'reading now', it would require a fundamental re-thinking of learning, of assessment, and of schooling.

Far from bringing simplification of text-making and text-remaking (in the interpretation/transformation of the text), the digital media bring the demand as well as the potential for greater subtlety and complexity through the presence of multimodal resources in the making of a text. Reading of multimodal texts demands new capacities. For instance, in Fig 1, the top right corner has a module, with a two-part, top-bottom structure (with an inserted element in the lower half of the module). The top is occupied by a photograph of a group of boys about to start a race; the bottom contains writing, and an inserted photo of what looks like a stack of books.

'Design' is now a crucial factor, both in making and remaking/interpreting, in production and reproduction of meanings/texts. Without serious attention, the meaning-potential of this seeming simple text can not be given proper recognition. With the shift to and the emphasis on 'design', "reading" can be seen as making and re-making of the text, both involving design

The structure of this module (and of any and every textual entity) asks an implicit question: "What design considerations went into its composition; and what considerations of transformation / interpretation and re-design need to go into its "reading". This seeming simple module is much more complex in its 'potentials to mean' than a straightforward written composition that could appear in the same space. We might ask: "If the order of the top and bottom elements in this module was inverted (that is, if the image was at the bottom and the written part on top) would there be an effect on the meaning of the module; and if so, what would it be?" "If the colour palette was a different one – with different hues and with de-saturated colours, say with a gentle pink and light blue – what change in meaning would that bring?" "If, in "reading" this modular element, we ignored, did not select, the inset square of the photo with the stack of books, what change in meaning would ensue?"

In other words, the seeming simplicity of the modular composition of the 'digi text' is an illusion: it is a complex, rich text. Refined notions of design were at work in its making; in its 're-making-as-reading' equally refined notions and understandings of the potentials of design have to be available to the person engaging with this text and this modular element.

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I suggested that in thinking *reading* and *learning* together, we need a theory of communication which insists that engagement with any semiotic / meaningful entity always involves *interpretation*. The reason for using the saturated reds and greens in the module just discussed will lead to a hypothesis about its meaning on the "reader's" part: not because *colour* is the issue, but because our assumption about reading is that everything in this module is there because it was designed to be there; and everything that is there carries the meanings meant by the designer – who, we assume, has factored in the characteristics of the imagined audience. How we, or the audience, interpret any one element – colour in this case – is a separate matter. But: interpretation is always present. In engaging with a message, I bring my resources to that engagement. My resources can never be identical

to the resources of the maker of the message; nor will my interest in making the choices of *colour* or *font* or *spacing* or *layout* or... ever be those of the initial maker – even though we may both have spent all our lives in the same community.

From the social to the semiotic; and back

I assume that the form of texts is shaped by social

arrangements. With that, it is evident that each kind of textual organization – and the resulting practices of engaging with the text – are likely to be closer or more distant to those of the 'reader'. That will have effects on the readings that any one reader can and will make. It brings with it matters of equality of access. The 'trad text' naturalizes the authority and (given the assumptions about 'communication' current in the era of the 'trad text') the relative power of author and reader. This *social* conception underlies the tra-



ditional form of texts, with its distributions of tasks, responsibilities, power, for author and for reader. The 'trad text' suggested integration and coherence, both in semiotic terms and socially.

A different conception of 'the social' is expressed in the modular arrangement; its implicit organizing principle is that of *choice* for the 'visitor' who engages with the text. It fits with the conceptions of the neo-liberal market – though it can fit with other

conceptions too: it offers power in the form of choice, and in the possibility of designing (and producing) a meaning-entity shaped by the interested design of the interpreter. The underlying dynamic of the modular arrangement is to support / promote diversity. In that it can be seen to be a force tending to encourage social fragmentation; it can also become a force in quite other social arrangements, based on equality. 'Choice' is the motivating principle of the text of modular arrangement; modularity is the cause of the



far looser forms of coherence of 'digi texts'. The social consequence is a very loose, light, or near absent connection socially. In the present, these coincide with underlying principles of the neo-liberal market, which seeks individuation: of consumers, of the niche as a means of multiplying potentials for consumption and profit. But 'choice' and diversity can also be imagined in communities with strong notions of democratic participation.

While the former, now no longer fully functioning (nation-) state attempted to shape imagined subjectivities and identities of *citizens* and of forms of *labour*, the neo-liberal market (with the state now as its servant) has a need not of *citizens* but of *consumers*. *Consumers* are shaped by the offer and possibility of *choice*. They are encouraged to imagine shaping their identities in and through *choice in consumption*. That can be seen as one underlying meaning and social effect of the modularly designed and constructed text.

The school needs to develop strategies to deal with a population which has grown up not just with the practices and affordances of the 'digi text', but with its principles appearing and active in most social domains

In other words, 'that which is to be read' offers means for engagement with specific potentials. How these are taken up will depend on the larger, dominant framings in which they are active and activated.

Reading, learning, identity, community

We can translate these possibilities and potentials into imagined forms of education. Young people now in school have grown up with choice – and its associated expectations – naturalized as an unquestioned norm for most of them and their everyday lives. They bring this with them into the school, from the earliest age. The school needs to develop strategies to deal with a population which has grown up not just with the practices and affordances of the 'digi text', but with its principles appearing and active in most social domains. On one – the positive? – side, the 'digi text' offers choice, and with it *agency* and *responsibility* by the person engaging with it. On the other – the negative? – side it normalizes / 'naturalizes' 'individuation'; it works against 'a community of meanings', of values,

of ethics, of knowing and assumptions, as a taken for granted situation. We might want or need to think of 'choice' with or without an ethical dimension.

'What is to be read' is the result of *design*, and therefore imbued with meanings in every detail. 'That which is read' is the result of *interpretation / transformation*. The person who engages with 'what is to be read', the 'reader', makes *selections* from what is there. So, for instance, in the top right module of Fig 1, there are trees in the background of the photo. Does the person engaging with the module *attend* to that, and *select* this element as *salient*? She or he may *not* pay attention; if she or he does, that element will have its effect through an interpretation: for instance "ah, it's on the outskirts of a town", "it's in a suburb". *Attention* is socially shaped and has cultural and semiotic consequences.

Remaking as *transformation* of 'what is to be read' is semiotic work done by the re-maker / interpreter. Semiotic work has effects on the worker's 'inner' resources. Semiotic work changes the person and their resources: in engaging in that work, their resources have changes, have been reshaped, however minutely: she or he has learned. Once reshaped, the inner resources are available to the *interpreter* both in their subsequent engagement with the world and in their subsequent shaping of subsequent messages. They have led to an expansion of the person's resources as potentials for *future design*. The shape of the world which is there to be engaged with in 'what is to be read' – in its formal aspects as well as in the range of modes and of other resources – becomes the material for new semiotic work in attention, selection and interpretation; and, in that, it becomes the material for new making.

In that process *identity* is constantly remade: minutely and ceaselessly. Reading as interpretation / transformation and inner remaking are indistinguishable from learning; and all are indistinguishable from the making of identity. At this point we return to the question of the characteristics of the world to be engaged with – whether in general, or in reading in particular. The characteristics of the 'trad text' offer one set of resources for interpretation / transformation / remaking: with its semiotic and social consequences. The characteristics of the 'digi text' offer different resources for interpretation / transformation / remaking, with its specific and different semiotic and social consequences. A major problem for society and for the school specifically is that in some places

– I am thinking of education in many anglo-phone societies – the school adheres to the 'trad text' and its social assumptions, while young people have been 'socialized' in the world of the 'digi text' and its assumptions. That leaves a problematically large gap – in all respects, and maybe most of all in conceptions of what learning is, how it is seen and felt and experienced in these two worlds.

Principles and assumptions

- text-making and re-making (reading) rest on social assumptions; they have social implications, which are rarely obvious or apparent;
- in the environment of the digital media a major compositional principle is the move away from linearity and toward modularity;
- the modular 'text', in its overall 'arrangement' / 'composition' tends toward the use of visual devices as means of arrangement/ composition and organization, and away from linguistic devices;
- the modular text is arranged such that those who engage with it will make their decisions, based on their interests, about how and where to enter the 'site'; and how and where to proceed within the site;
- the apt understanding to communication is that 'communication has taken place when there is interpretation'
- this assumption about communication makes the interpreter central; in the case of 'interpreters' in (formal or informal) learning / teaching environments, this makes the interpretations of learners central. The interpretations are seen as the outcome of principled engagement with 'what is to be read';
- in a conception of education based on the contemporary principles of reading, 'interpretations' are not treated as 'the end of the matter of learning and teaching'. The teacher's response is to design a new learning environment in response to the interpretation, aimed to bring the learner closer to their community's understandings.

A view of 'reading as design' opens ways to understanding, and to choices about social, semiotic and pedagogic action. We might wish to make readers fully aware of the potentials and limitations of the 'digi text' and its social provenance and implications. We might wish to find ways of using the enabling positives of the 'digi text' – of makers and (re-) makers of texts as agentive designers – the while attempting to avoid its negatives, its potentials toward social frag-

mentation. We might wish to preserve those aspects of the 'trad text' which we as members of a community do not wish to lose, and construct a social frame in which the positive aspects of both the 'trad text' and of the 'digi text' can become integrated. In that perspective, the question of 'reading' is one about the semiotic and the social world which we would wish to have: one which is profoundly fragmented, and getting ever more so? What does or will such a world offer; and what do we think it would lack?

I wish to thank Jeff Bezemer, Margit Boeck and Myrrh Domingo for help and comments.

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