

## ATP Workshop Talk, Institut Francais, London 20<sup>th</sup> July 2015

### 'What Happened Next?': Hjelmslev's net, Arachne's web and the figure of the line in Plateau 8

#### Intro

Today I'm going to talk about the figure of the line and other related geometries and structures in the Three Novellas plateau. As it's the most literary of all the plateaus, this paper has a decidedly literary flavour. I'll mainly talk about lines and their relation to language, temporality and gender. I'll talk about lines in relation to **one** of the three novellas which Deleuze and Guattari discuss - Henry James' *In the Cage*- and then in a relation to a **fourth** novella which I've chosen, Ali Smith's *Girl Meets Boy*.

#### Lines and Forms

The figure of the line is clearly of huge importance in the Three Novellas plateau, but it's a thread which runs not just through the Three Novellas plateau but through the whole of *ATP*. Plateau 8 is the most explicitly literary discussion we get in *A Thousand Plateaus*, but it points both inwards and outwards to reveal the movements and lines both underneath and outside which power these particular instances and happenings.

#### LINE AND FORM

So. Lines in Plateau 8. As Deleuze and Guattari say, 'we are made of lines'. And as they also say in the *Geology of Morals* 'there is no 'like' here. There is no 'like' here, we are not saying 'like an electron,' 'like an interaction,' etc. The plane of consistency is the abolition of all metaphor; all that consists is Real.<sup>i</sup> Similarly, then, we actually are made of lines. They can be seen everywhere. The relationship we have to these multiple types of lines is the same as the relationship we have to the things we make and the things we become. Deleuze says in *Dialogues*, and I quote:

As Lewis Carroll says, it is when the smile is without a cat that man can effectively become cat as soon as he smile. It is not man who sings or paints, it is man who becomes animal, but at exactly the same time as the animal becomes music, or pure colour, or an astonishingly simple line . . . It is because philosophy is born or produced outside by the painter, the musician, the writer, each time that the melodic line draws along the sound, or the pure traced line colour, or the written line the articulated voice . . . Everything which becomes is a pure line which ceases to represent whatever it may be'. (pp.73-74).

The pure line Deleuze is talking of here is the figure of the abstract line, the pure and empty form which is a motif throughout his work. But what about the lines which Deleuze and Guattari talk about in Plateau 8? These lines trace much more than narrative events. And various thinkers inspire the thinking of lines in this plateau and the pattern that these lines of life and language make.

The lines discussed in this plateau are equally lines of writing, lines of life, spatiotemporal coordinates, lines *between* other lines, and many others. The conjunctive nature of these lines forms the basis of Deleuze and Guattari's analysis of the three novellas. The 'rigid, clear-cut segmentarity' is composed of expectations; of societal norms; of linear, predictable progression, of time measured out evenly by events, of 'afternoons measured out by coffee spoons'. If we continue with literary analogies, T.S. Eliot's unfortunate J. Alfred Prufrock is a particularly apt conceptual persona for a life of rigid segmentarity.

For I have known them all already, known them all;  
Have known the evenings, mornings, afternoons,  
I have measured out my life with coffee spoons;  
I know the voices dying with a dying fall  
Beneath the music from a farther room.  
So how should I presume?

Next - The line of 'molecular segmentarity' is perched in between the absolutes of rigidity on the one hand and deterritorialization on the other. This line is supple, rather than rigid, and allows for micro-transformations to be made. Sticking with the literary theme, a conceptual persona for molecular segmentarity we might think of someone like Virginia Woolf's Orlando, who lives a segmented aristocratic existence according to the time in which he or she currently finds himself or herself, and abides by the gendered rules without question despite her awareness of the arbitrariness of the division.

'She remembered how, as a young man, she had insisted that women must be obedient, chaste, scented, and exquisitely apparelled. "Now I shall have to pay in my own person for those desires," she reflected; for women are not (judging by my own short experience of the sex) obedient, chaste, scented, and exquisitely apparelled by nature. They can only attain these graces, without which they may enjoy none of the delights of life, by the most tedious discipline.

Finally, the line of flight, or line of absolute deterritorialisation, is the most extreme of the three lines. To use any model of extensive gradation leads us into problematic territory in Deleuze and Guattari's philosophy; the increase or acceleration involved in the gradation/continuum of the three lines is of an intensive nature. Maybe Beckett's disembodied Mouth from *Not I* **might** express the beginning of a line of flight (?)

'... out ... into this world ... this world ... tiny little thing ... before its time ...'  
Samuel Beckett, *Not I* (1972)

The process of traversing the lines, from rigid to supple to abstract, is a simultaneous process of intensification, acceleration, destratification and deterritorialisation. And linked to this in Plateau 8 there's an important relationship to temporality.

## TIME

The three fundamental dimensions of time haunt the beginning of this plateau, although as Deleuze and Guattari point out, 'it would be a mistake' to equate past, present and future directly with the tale, the novel and the novella. The reason why it's a mistake to merely align the novella with the past, the novel with the present and the tale with the future is to do with movement and stasis, and also with temporal placing. The type of linguistic temporality presented in this discussion of the three novellas in question occupies a space-time which requires not only both questions 'What happened' and 'What is going to happen', but the operation of differentiation between the two. If we think about the difference between the question which Deleuze and Guattari ask of the tale, 'What is going to happen?' and the question which they ask of the novella, 'What happened?', we are thinking along the lines of a Deleuzian time consciousness, which is to do with maintaining an awareness of the difference between the supposed 'now' and all pasts and futures. In the attempt to place ourselves in the now, all we can do is find ourselves in the not-now, and distinguishing between the now and the past, and the now and the future.

These two questions, 'What happened', and 'What is going to happen', reverberate around several of Deleuze's works, for example in *Negotiations*, when Deleuze is discussing his own philosophical practice of personifying concepts and giving them proper names. This is important when we think about the discussion in the Three Novellas plateau, where we see this process in reverse – the characters of the novellas become depersonified – they become mere lines or segments; forces of liberation or of blockage. So in *Negotiations* Deleuze says: 'Philosophy's like a novel. You have to ask "What's going to happen?" "What's happened?" Except the characters are concepts, and the settings, the scenes, are space-times'. It is clear that concepts are characters for Deleuze, but rather than merely settings, I think that the operation of 'depersonalisation' taking place with these character-concepts or conceptual personae results in 'spacetime' becoming a character in itself.

SO - Deleuze and Guattari describe the novella as being linked to the form of the secret. Just like the other ways in which the literary forms are defined, this description also pertains to temporality. But it's a complex type of temporality. In *The Logic of Sense* Deleuze spends a long time setting out the distinction between Chronos and Aion as the two forms of time, and then convincing us that the Aion, which is presented as a straight **line** traced by an aleatory point, encompasses both Chronos and itself. What's significant for this discussion is Deleuze's description of the Aion as a straight line, and also as the pure and empty **form** of time. The way this is described according to its formal dimension is precisely the way that the secret which powers the novella is described in this plateau. I quote: 'the novella relates, in the present itself, to *the formal dimension of something that has happened*, even if that something is nothing or remains unknowable'. To use Deleuze's terminology from *Logic of Sense*, we could say the novella relates to the **sense** of something that has happened. The unknown or unknowable secret powers the narrative, and it operates in the same way as the pure and empty form of time – a straight line traced by an aleatory point. The figures of line and form are linked through a common thread of abstraction. We abstract ourselves so that the lines become perceptible and sense, or the

infinitive, or the purport to use Hjelmslev's terminology. But this abstraction process goes both ways, as theorists of the avant-garde know very well. We lose In the words of Marjorie Perloff, 'there can hardly be rupture without a compensatory addition; to cut out X inevitably means to make room for Y'. (from *The Futurist Moment*, p.115). So when the Cheshire cat loses the smile, simultaneously the man becomes the cat when he smiles.

## Hjelmslev

It's clear that there are various linguistic theories which inform the thinking of lines in this plateau. There's a linking up of geometries and archaeologies of language. There's an ongoing dialogue with structuralism which we see in both *Anti-Oedipus* and *ATP*, we see a sharp differentiation between Saussurian structuralism and the glossematics of Hjelmslev. SO we'll turn briefly to Hjelmslev

In *Prolegomena to a Theory of Language* [1943] Hjelmslev departs from Saussure. Hjelmslev's differentiation between expression and content within a linguistic sign is then further differentiated into expression-form and content-form, and expression-substance and content-substance. Hjelmslev's term 'purport' operates along similar lines to Deleuze's 'sense' of the *Logic of Sense* era; it is defined as 'a principle that is naturally common *qua* principle to all languages, but one whose execution is peculiar to each individual language – this factor will be an entity defined only by its having function to the structural principle of language and to all the factors that make languages different from one another'. It is described as the 'thought'; the 'amorphous "thought mass"'; and even, quite poetically for Hjelmslev, the same handful of sand formed in different patterns and 'the cloud in the heavens that changes shape in Hamlet's view from minute to minute.' There is much here to compare with Deleuze's sense. For Hjelmslev, then, the content-form stands in arbitrary relation to the purport, which is also the content-substance. The same goes for the expression-form, which stands in arbitrary relation to the expression-substance. This is the net that inspires Deleuze and Guattari. Later on, in *Language: An Introduction* [1963], Hjelmslev differentiates between the different types of constituent parts of a text and how they relate to one another. There are firstly *implicational* and *non-implicational* relations. Implicational relations imply that one constituent part necessarily presupposes the other, whereas non-implicational relations do not. Within *implicational* relations Hjelmslev differentiates between reciprocal or unilateral. Whilst within *reciprocal* implicational relations one element may presuppose the other and vice versa, *unilateral* implicational relations may not operate either way round; one element may presuppose the other but it does not work the other way round. Hjelmslev uses the term 'husband' as an example of a reciprocal implicational relation. The presupposed entity of the wife here is '*latent*'; her existence is presupposed even if she is not present. Conversely, Hjelmslev uses the example of chess to illuminate a unilateral implicational relation: 'the king is implied by all the other pieces – if the king is mated, all his men are captured and the game is over – but not vice versa'.

It is the reciprocal implicational relations which lead us to the most famous distinction within language which Deleuze and Guattari take from Hjelmslev: the

content plane and the expression plane. These planes are related reciprocally, and are then further divided into smaller and smaller elements which we recognise as constituent linguistic building blocks: paragraphs, sentences, words, consonants, etc. What is interesting about these categories for Hjelmslev is that 'the substitution of one member for another can entail a difference in the opposite plane of language.' The test to see whether changes occur across both categories for Hjelmslev is called a *commutation* test, and leads to his overall definition of language itself as 'a structure in which the members of each category have mutual commutation.' So it's clear that this is a schema of high abstraction, and adds extra lines to a structure of signifier and signified which we're much more familiar with. Gary Genosko calls Hjelmslev's glossematics an 'arid algebra of language' But remembering the give-and-take nature of abstraction, there's a simultaneous high materiality factor. *There is something interesting going on with language and matter here; there is a gesture towards an intensified linguistic materiality which is both more abstract and more concrete.* It's an immanent linguistics. Claire Colebrook calls Deleuze's geology of morals 'an attempt at a grammar of space: different series, planes, territories, paths and maps'. If we reverse the concept of a grammar of space, perhaps we get a geometry of language. The structuralist project was one attempt at a kind of geometry of language.

In the post- or even anti-Saussurian landscape of the 1970s, unlike thinkers like Baudrillard who saw in Hjelmslev a similar ideology of signification to Saussure himself, Deleuze and Guattari saw a sharp difference and departure from Saussure. In *Anti-Oedipus* Deleuze and Guattari set out their stall very clearly: 'We believe that, from all points of view and despite certain appearances, Hjelmslev's linguistics stands in profound opposition to the Saussurian and post-Saussurian undertaking.' (AO, p. 263.) They believe it is different for a number of reasons, and they list them fervently, One selection: 'Because there no longer occurs a double articulation between two hierarchized levels of language, but between two convertible deterritorialized planes, constituted by the relation between the form of content and form of expression. Because in this relation one reaches figures that are no longer effects of a signifier, but schizzes, points-signs, or flows-breaks that collapse the wall of the signifier, pass through, and continue on beyond.' (AO, p.263). Deleuze and Guattari champion Hjelmslev because their language in his system is both an inclusive and an intensive continuum. And it does not subscribe to what was described as linguistic imperialism. Genosko calls Barthes' approach to semiotics a translinguistic one. Hjelmslev's linguistics is an immanent linguistics, according to Genosko. Deleuze and Guattari state in *Anti-Oedipus* that Hjelmslev's linguistics is 'the only linguistics adapted to the nature of *both* the capitalist *and* the schizophrenic flows: until now, the only modern (and not archaic) theory of language.' What Hjelmslev destroys in the Saussurian system is the hierarchy and the directionality of signification, because it's a reciprocal relation and destroys the hierarchy of signifier over signified, or in Genosko's words, as a 'prophylaxis against signifier fetishism' (179). Hjelmslev upholds the mutual presupposition of expression and content.

## JAKOBSON

Two other 20<sup>th</sup> century figures who produce dynamic lines of language and relate to Hjelmslev interestingly are Jakobson and Deligny. Jakobson's argument regarding the dual dynamism of linguistic axes, which he first outlines in the 1920s, suggests that synchrony and diachrony be studied not as separate entities but together. His basis for this argument is a placing of systematicity in dynamism and vice versa; as he says of synchrony and diachrony, 'the history of a system is in turn a system'. According to Jakobson and Tynjanov, pure synchrony or pure diachrony is an illusion, and the opposition of these is equal to the opposition between the concept of system and the concept of evolution. For them, systems evolve just as evolution is systemic. Jakobson uses this argument throughout his career; he restates much later in his 'Dialogue on Time in Language and Literature' (1980) the need for 'the overcoming of statics'. For Jakobson, the most important area of linguistic temporality requiring study is the interrelation between simultaneity and succession, which is the linguistic expression of what Bergson discusses in *Duration and Simultaneity*. The primacy of the dynamism of an invariant perceptible in Jakobson's thought is precisely what Deleuze enthusiastically elucidates in his essay on structuralism. SO – *what unites Deleuze's thinking of time and Jakobson's thinking of language is the way that movement and stasis reciprocally determine one another.*

### **Deligny**

Guattari in particular is very influenced by the work of Deligny, and the thinking of lines which we see all the way through *A Thousand Plateaus* is an interesting conflation of Deligny's conception of the network and Hjelmslev's conception of the net (amongst lots of other influences). As Deligny famously says, 'A network is a mode of being'. As he less famously but just as importantly says, 'A network exists only in the infinitive'. There is a lot to say about this when we keep in mind how loaded the concept of the infinitive in Deleuze's work in *Logic of Sense*. The infinitive is poetry itself. In his wonderful text *The Arachnean* he talks about writing as the spinning of a web.

'The fact remains that there is the act of writing and there is the what. The what, the contents of the book, what it will say, what is written about is obviously the essential thing; what remains is the act of writing, which is Arachnean. You can look at ten thousand, a hundred thousand hands writing: they all do the same thing. There are nonetheless some differences between the spider and the act through which the fingers of a hand – turned into legs – and the palm – turned into a body – write; the thread of words does not emerge from spinnerets located at the base of the wrist; we have had to learn to write.

What is interesting is his description of the network or fretwork of lines on the skin of the hand (see p.79-80). The lines formed from creases on the hand do not correspond to the skeleton; these lines have no rational function and differ in every human being. Just like a network and like our hands, we manifest in different ways. A hand is like a language. The folds and creases of our hands is our expression and the bones are our content, and the two are reciprocally related.

## **Braidotti**

It's worth exploring further the role of gender in the thinking of lines and webs; specifically how human or indeed posthuman subjects can produce themselves through or with these networks of lines. Rosi Braidotti has something to say about this:

The marginal subjects who inhabit the multiple locations of devalued difference have their own task cut out for them, insofar as they too often tend to be caught in dialectical relationships of submission, frozen by the paralysing gaze of the master – hating him or her and envying him or her at the same time. For instance, in order to shift from this dialectically binding location, the feminist subject needs to activate different counter-memories and actualise alternative political practices. Becoming-nomadic means that one learns to reinvent oneself and to desire the self as a process of qualitative transformation. Becoming-minor rests on a non-unitary yet politically engaged and ethically accountable vision of the nomadic subject. Both the Majority and the minorities need to overcome the Dialectic of Majority/Minority or Master/Slave and untie the knots of envy (negative desire) and domination (dialectics) that bind them so tightly. In this process, they will necessarily follow asymmetrical lines of becoming, given that their starting positions are so different. For the Majority, there is no possible becoming-other than in the undoing of its central position altogether. The centre is void; all the action is on the margins.

So this extract shows from Braidotti how in her nomadic ethics, the feminist subject affirms themselves through following what she describes as asymmetrical *lines of becoming*. Her emphasis on voiding the centre can similarly be seen in her work on the posthuman when she talks about the sobering process of defamiliarisation as maintaining a critical distance from the dominant vision of the subject. This is one example of how a Deleuzian feminist thinker can set these concepts to work. So let's turn to one of the novellas discussed by Deleuze and Guattari in Plateau 8 and focus on the young female telegraphist in 'In the Cage'.

### **'In the Cage'**

The segmented existence described in Henry James' 'In the Cage' proposed by Deleuze and Guattari cannot be considered independently of the concepts of segmentarity discussed in other sections of the book. Segmentarity is a force of rigidity, or rather a blockage to an emancipatory or abstracting force, clearly perceptible in the predictable and segmented life of the telegraphist. Literally represented by the bars of the cage in which she sits at her job for so many prescribed hours of the day, James' heroine is imprisoned and is nevertheless able, through her narrative voice, to express and sustain throughout the novella an entirely different inner world. The 'conjugation' expressed by the heroine's fiancé is of a different type to the 'conjunctive' logic expressed by Deleuze and Guattari everywhere in this book but particularly at the beginning in the

Rhizome section. The grocer and the telegraphist, the man and the woman, are molar segments which slot together without any independent thought, creation or expression.

The distinction between doubles and couples is interesting in the discussion of James' story. The heroine and her fiancé are a couple. Their relation is described as 'intrinsic'; the aggregates which determine their reciprocity are easy to classify. The heroine and the gentleman customer with whom she becomes obsessed are described as doubles. The segmentation which takes place in this 'doubling' is of a different kind; it is described as molecular or supple segmentation; 'the quanta of deterritorialisation'. Pointing towards something not-quite-expressed but gestured towards, this segmentation is expressed only formally, since, as Deleuze and Guattari state, 'the ungraspable matter of that something is entirely molecularized, traveling at speeds beyond the ordinary thresholds of perception'. Our heroine cannot speak in definitive terms about the 'alternate self' waiting for her after she finishes work. Ultimately in this novella there *is* a partial answer to the question 'What happened?' in terms of the molecular relation between the telegraphist and the telegraph sender. Nothing happens. What Deleuze and Guattari call the form of the secret dissolves; everybody slots into their predefined segments and carries on just as if nothing has happened because nothing has. The fact that we are never told the exact nature of the secret is important; it is the *form* of the secret which interests Deleuze and Guattari here. The form of the secret can be described or defined using a number of Deleuzo-Guattarian terms: the secret's form is its sense; it is imperceptible because it is not actualised. It is the novella's motivational force. The fact that the secret's form never becomes materialised is also important. The molecular relation between the heroine and the telegraph sender is 'dissolved in the form of the secret - because nothing happened'. And yet this is not the full answer, because Deleuze and Guattari would not have chosen this text by James if that were the case. The dissolution of the molecular relation between the telegraphist and the telegraph sender becomes something more extreme; Deleuze and Guattari posit that the heroine achieves 'a kind of absolute deterritorialisation'. There has been an encounter, an acknowledgement and a retrenchment. A shift has occurred only at the level of thought and perception. The lines from James which Deleuze and Guattari quote at this point are from a French translation and quite different from the English, but a few lines before this in James' text the epiphanic moment is described retrospectively thus: 'It had been an abject little exposure of dreadful impossible passion.' Nothing has happened but everything has changed.

### **MY READING OF ALI SMITH'S NOVELLA**

I'm going to suggest and demonstrate an extract of a reading of another novella of my own choosing: 'Girl Meets Boy' by Ali Smith, a modern retelling of Ovid's myth of Iphis and Ianthe from the *Metamorphoses* but set in Scotland in 2007. I'm going to frame my discussion around the interplay between the two questions 'What happened' and 'What is going to happen', which form a kind of refrain in this plateau.

It begins: 'Let me tell you about when I was a girl, our grandfather says'. This statement begins Ali Smith's novella 'Girl Meets Boy', set in Inverness in 2007, about a romance between the disillusioned employee of a competitive bottled water company and a political activist who tags themselves Iphis and stages performative protests against the local segmentary forces of patriarchy and capitalism whilst scandalizing local residents through their problematization of gender. So, what is the form of the secret in this novella? In the words of Deleuze and Guattari, 'whatever could have happened, even though everything is and remains imperceptible, in order for everything to be and remain imperceptible forever'? One segmented dividing line which provides a potential direction for this question is gender. Its disruption can be found everywhere, between the lines of writing, the lines of life, even, to quote Deleuze and Guattari again, along 'the lines productive of the variation of the line of writing itself'. This is particularly evident in this novella. My argument is that in Smith's text, the straight line traced by the aleatory point is the event or the formal dimension of gender. It can be read like Deleuze's Aion. The adult narrator recalls watching the game show *Blind Date* from her childhood with its pantomime sliding door as the very literalisation of the division between male and female. The back-and-forth motion of this sliding door separating the contestants is emblematic of the oscillations between the opposing forces of rigid segmentarity and deterritorialisation perceived everywhere in this text. The actions of deterritorialisation, the political lines of protest drawn, and the ensuing lines of punishment drawn up, from the angry lines etched out of the golf green in acid saying **NO VOTES NO GOLF**, to the bars in prison cell blocking freedom and the analogous penal function of the force-feeding tubes entering the body of the hunger-striking activist, all operate simultaneously whilst the gender boundaries are subjected to a forceful linguistic challenge. The sister of our protagonist inhabits a self-built prison, a completely rigid and segmented life which is evidenced immediately and physically in the very typography of the novella, in her ritual enactment of closing and sealing off her utterances in parentheses. Everything in this character's life is monitored and controlled, from the ingestion and expulsion of food into her starved body, the miles she treads and the calculation of calorie loss versus intake, the brands on her sportswear and the type of life she buys into with these brands, the power lines linking her and the misogynistic male members of the company. The disruption of gender is the form of the secret which enables this character to reach an epiphanic moment and break down some of the bars she has constructed around herself.

Deleuze and Guattari state in *A Thousand Plateaus* that true creation only takes place during a line of flight. A line of flight is enacted over the course of this novella, and this is illuminated in various ways. One climactic section of the narrative in which some kind of literal **and** metaphorical metamorphosis or becoming is taking place, like an androgynous Alice in Wonderland, and is composed, quite fittingly, entirely of questions. Another section is almost Joycean in its free-flowing stream of subconsciousness – here's an extract . . .

I was a she was a he was a we were a girl and a girl and a boy and boy, we were blades, were a knife that could cut through myth, were two knives thrown by a magician, were arrows fired by a god, we hit heart, we hit

home, we were the tail of a fish were the reek of a cat were the beak of a bird were the feather that mastered gravity were high above every landscape then down deep in the purple haze of the heather were roamin in a gloamin in a brash unending Scottish piece of perfect jigging reeling reel can we really keep this up?  
**Smith, *Girl Meets Boy*, p. 103.**

I feel that to analyse the intersecting lines and segments of this extract might detract from the effect, but just briefly, I think it's an excellent demonstration of how language, temporality, content and expression are bifurcated, intersect, break, become dynamic and other and take flight. Content and expression both take flight here. We see the conjunctive logic performed at a lexical, syntactical and semantic level in this whirling jigging reeling reel – the musical reel is another line here. Parataxis is the quintessential conjunctive and poetic form. Becoming-she, he, interchangeably, and ending with the form of the question which does not require an answer because an answer would be teleological and this affirmation of queer becoming resists teleology. This extract arguably gets close to an enactment of a line of flight, but it's far too reliant on preconceived terminals and discrete, knowable words to really be one. Just like a lot of Deleuze and Guattari's literary references, we could think of lots of more extreme examples.

Towards the end of the novella, what is described as 'the old spectrum' is something that has become obsolete, because once the characters have become deterritorialized they are able to perceive an entirely new spectrum altogether. It is not a question of a difference in degree; a transversal shift has occurred. And of course we shouldn't forget the narrative source of this story, the myth of Iphis and Ianthe, and the intermingling lines of narrative which intertwine with the new ones, and the retelling that is the narrative line itself is retold again, and then again within the fictive frame. Ovid's *Metamorphoses* is of course the overall source for this novella, and there is no better ancient figurehead than the irreverent creator of shape-shifting amoral parables, except perhaps Heraclitus, whose river flows through the conclusion to the novella in a song described as 'the song of the flow of things', an undammed force of creativity and vitalism. So we end with the line of the flowing river; in the words of Leonardo da Vinci in his *Treatise on Painting*: a living being is characterized by the undulous or serpentine line, that each being has its own way of undulating, and that the object of art is to make this distinction'.

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