Landscape Descriptions and Emotional Qualities: Cognitive and Neurological Correlates

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Abstract
This paper further pursues my lifelong fascination with two intriguing issues involved in poetic language. First, language is logical and conceptual; but poetry uses it, sometimes, to convey nonlogical and nonconceptual experiences. Secondly, poets frequently solve this paradox by two additional paradoxes: expressing emotions by nonemotional descriptions of the immediate physical environment (mainly, but not exclusively, nature descriptions), and having recourse to deixis in combination with the genitive construction "the ABSTRACT of the CONCRETE", manipulating the abstract noun into the referring position (abstract nouns are the conceptual tool par excellence, but in certain conditions may generate emotional qualities). This paper presents my attempts during the past decades to account for these paradoxes, first in the vein of New Criticism, then relying on cognitive psy-chology, finally invoking various stages of brain research. The discussion is fo-cussed on two excerpts, by Apollinaire and Wordsworth, describing an exceptionally serene morning in the great city, Paris and London, respectively.

Keywords
Wordsworth, Apollinaire, Emotional Qualities, Nature Descriptions, New Criticism, Cognitive Poetics, Neuroaesthetics

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My work in Cognitive Poetics grew out initially from Anglo-American New Criticism, and from analytic philosophy; later, also from Russian Formalism. It was motivated by an uneasy feeling that poems have not only meaning and poetic structure, but also a perceived effect; and that this perceived effect can

be accessed only by invoking the cognitive processes of a human perceiver. The New Critics were preoccupied with poetic meaning and structure, mainly semantic, rarely prosodic too, and only occasionally ventured into explicit evaluation. F.R. Leavis' paper "Abstraction and Movement" encountered below is the exception rather than the rule. As a rule, they adhered to the description level, and only tacitly assumed that the semantic structures described, e.g. ambiguity or paradox (briefly: complexity) were a good-making feature of poems.

In this paper I will explore two problems that have haunted me for fifty years or so. More precisely, I will report how I found the solutions to these riddles, step by step. Language is typically conceptual and logical, but poetry — supposed to convey sometimes experiences that are nonconceptual and nonlogical — is written in language. Some poets, at least, have remarkable success in fulfilling this mission impossible. My other riddle concerns one of the poets' preferred solutions. Instead of describing their feelings and emotions, they give us a nature description. Some of those poets have recourse to what Ruskin called "the pathetic fallacy", that is, attribute human feelings to the forces of nature, but some succeed to convey feelings by a description of what they perceive through the senses. These are not necessarily the feelings of the poet, nor those aroused in the reader, but an emotional quality detected in the poem. Let us start our inquiry with two poetic excerpts, on a similar topic.

Bergère ô tour Eiffel le troupeau des ponts bêle ce matin
(Shepherdess O Eiffel Tower the herd of bridges is bleating this morning)
Guillaume Apollinaire, "Zone"

Earth has not anything to show more fair:
Dull would he be of soul who could pass by
A sight so touching in its majesty:
This City now doth, like a garment, wear
The beauty of the morning; silent, bare,
Ships, towers, domes, theatres, and temples lie
Open unto the fields, and to the sky;
All bright and glittering in the smokeless air.
William Wordsworth, "Composed Upon Westminster Bridge, September 3, 1802"

Both these poems describe an unusual, even extraordinary, serene, "pastoral" morning in the great city, Paris and London respectively. Apollinaire's poem is a classic of surrealism, Wordsworth's sonnet — a romantic classic. This difference is readily perceived in the stylistic effect of the imagery. Apollinaire's description consists of one sustained metaphor identifying two pairs of visual entities, the Eiffel Tower with a shepherdess, from which one

may abstract a similar shape: uprightness; and the famous bridges of Paris with a herd of sheep, from which another similar shape can be abstracted: horizontality. The herd of sheep consistently develops the shepherdess image; the bridges consistently develop the Eiffel Tower image. The Eiffel Tower stands upright among the bridges just as the shepherdess stands among the sheep. By the same token, this identification foregrounds the incompatible features of these visual images. The consistent development enhances the unity of each image; by the same token it enhances the incompatibility of the two images.

This is how John Crowe Ransom (1951) defines a metaphysical conceit: both images are so consistently developed that both must be meant. Consequently, in terms of James Smith's definition (1934) of the metaphysical conceit, its elements may enter into a solid unity while preserving their warring identity. To increase this incompatibility, an action is attributed to the "herd of bridges" (bleating) that is compatible with "herd" but not with "bridges", even though the extralinguistic landscape described involves bridges, not sheep. Each image attempts to establish itself in the reader's perception so as to prevent the other from usurping its place; as a result, each one of the conflicting images enhances itself and is sharpened in the reader's perception.

According to Coleridge, imagination reveals itself in the balance or reconciliation of opposite or discordant qualities (*Biographia Literara*, Chapter XIV). From this an important stylistic principle can be derived. If the opposite or discordant qualities are emphasised, the resulting poem displays split, sharp focus, typically associated with witty qualities; if their balance and reconciliation are emphasised, it displays integrated soft focus, typically associated with emotional qualities.

Texts typically indicate that they should be construed metaphorically by some contradiction. Objects that have stable characteristic visual boundaries resist fusion and are prone to generate visual conflicts resulting in witty effects. This is what I have called "split focus", and some art historians, following Wölflin, have called "sharp focus". Thus, the bleating of the sheep suggests a pastoral atmosphere in Apollinaire's description, but it is underlain by some witty undertones.

Romantic imagery, by contrast, typically avoids such visual conflict. Wordsworth's eight lines contain one relatively brief formal metaphor plus simile: "This City now doth, like a garment, wear / The beauty of the morning". In Anton Ehrenzweig's terms, "The beauty of the morning" is a thing-free and gestalt-free quality. Apparently, the simile "like a garment" is meant to facilitate the understanding of the metaphor "wear the beauty". Actually, the opposite is the case. It ensures that one does not construe "wear" simply as "exhibit, present, display". In other words, it ensures that a metaphorical contradiction is perceived. Garment has a stable visual shape (though is general enough to lack a characteristic shape), whereas "beauty" is an abstraction, that is, may have no stable visual boundary. "The City" itself is a collective noun;

it refers to a stable visual entity that has no characteristic shape. Thus, despite the simile that sharpens the contradiction, the conflicting elements fuse smoothly.

On the grammatical level, adjectives and abstract nouns refer to the same kinds of attributes, only while adjectives may serve as attributive adjectives or predicates, abstract nouns can be manipulated into referring position. In this metaphor, we have a syntactic construction I call "topicalised attribute" or "thematised predicate", where not the singular term is manipulated into the referring position; rather, one of its more general attributes (e.g., "*beautiful* morning" or "the morning is *beautiful*") is turned into an abstract noun and topicalised. In many of my publications (e.g., Tsur, 2003b) I have pointed out that abstract nouns in general and, in particular, such ABSTRACT of the CONCRETE constructions when joined with some deictic device tend to generate exceptionally intense emotional qualities. *Deixis* is the pointing or specifying function of some words (as definite articles and demonstrative pronouns), tense and a variety of other grammatical and lexical features whose denotation changes from one discourse to another. "Now" in our verse line is such a deixis.

Etymologically, the word "concrete" is derived from a word meaning "grown together"; in a concrete object several attributes are grown together. "Abstract" is derived from a verb meaning "draw away", "separate from"; abstractions are single attributes drawn away, separated from the concrete objects. In "morning", for instance, several attributes are grown together (e.g., sunshine, beginning of a day and, in this case, beauty); by "drawing away" one attribute from the object and linking it by the genitive link "of", the relationship between the attribute and the object is loosened; and by manipulating it into the referring position, it becomes a thing-free and gestalt-free quality rather than an abstraction proper. Romantic and symbolist poets are particularly fond of such constructions, to suggest elusive qualities and realities (Wordsworth's "the *gentleness* of Heav'n broods o'er the sea"; Verlaine's "où la *langueur* du soleil danse" [where the *languour* of the sunshine dances]; emphases added). One must note here that in "morning" and "heav'n" quite a few attributes are "grown together"; in this they are similar to concrete nouns. They have, however, no stable visual boundaries, and can't be touched; in this they are similar to abstract nouns.

Since thing-free and gestalt-free qualities have no stable visual boundaries, no visual conflict arises even when fusing with stable visual shapes. I have called such smooth fusions "integrated focus"; some art historians call them "soft focus". From "garment" and "beauty" no shared visual shape can be abstracted like from Apollinaire's images, but rather some shared function: beauty envelops the city just as a garment envelops the human body and both may be cast off in due course.

At the time of writing my DPhil dissertation I would have accounted for this effect by appealing to the notion "the concrete universal", that was

systematically applied to metaphor analysis by W. K. Wimsatt in the twentieth century. The concrete universal is usually conceived of as a concrete object that, at the same time, represents a universal. I extended this meaning to an abstraction perceived here-and-now, in a concrete situation. In such a context, "abstraction" is not conceived of as expressing a quality apart from an object or particular situation; its relationship to it is merely loosened. At that time I would have accounted for the literary effect here by invoking the tension between the concrete and the universal, something that is supersensuous like an abstraction, but perceived as more concrete, more dense, somehow physically present. Somewhat later I decided to enlist cognitive psychology, as well as the perspective of two great New Critics to my argument.

It is illuminating to compare what two great New Critics have to say on this poem. In his "Language of Paradox", Cleanth Brooks says: "Wordsworth's sonnet Composed upon Westminster Bridge is one of his most successful poems but readers find it difficult to account for its goodness" (p. 5). Contrary to his record as a great practical critic, he says very little on the minute subtleties of this poem; he makes a rather verbose statement on the paradoxicalness of this poem, with a few quotations from it, mainly from the sestet.[1] He has very little to say about the text of the octet (except on the list of concrete nouns in line 6) but that, as we shall see, is highly consistent with my argument. Though it is not clear at all how it illustrates his argument, it is for him, clearly, a good-making feature of the poem. His main argument is that the poem gets its power from the paradoxical situation out of which it arises. The speaker is honestly surprised, and he manages to get some sense of awed surprise into the poem, that the city should be able to "wear the beauty of the morning" at all (p. 5).

In his preface to the second edition of the Lyrical Ballads Wordsworth stated that his general purpose was "to choose incidents and situations from common life" but so to treat them that "ordinary things should be presented to the mind in an unusual aspect." Coleridge was to state the purpose for him later, in terms which make even more evident Wordsworth's exploitation of the paradoxical: "Mr. Wordsworth ... was to propose to himself as his object, to give the charm of novelty to things of every day, and to excite a feeling analogous to the supernatural, by awakening the mind's attention from the lethargy of custom, and directing it to the loveliness and the wonder of the world before us …" (p.7)

[1] By contrast, he defends at great length the "Calais Beach" poem against Leavis' criticism, going into its linguistic subtleties. I have elsewhere (Tsur, 2003: 134–139) presented at great length Brooks's an Leavis' positions on that poem, and my own position which is similar to the one presented here.

For F. R. Leavis, by contrast, it is a rather poor poem. All the praises he adduces is only to show that even this poor poem is superior to Wordsworth's "Calais Beach" sonnet, which for Leavis is the prototypical bad poem ("so positively distasteful to some readers"). Ironically, it is Leavis who points out in the octet verbal constructions that support Brooks's claim, suggesting some paradox. The clue to the superiority of this poem to "Calais Beach" presents itself in the unobtrusive adjective 'smoke¬less'. "Though unobtrusive, it is far from otiose; obvious as it looks, it does more than it says. It conveys, in fact, both its direct force and the opposite" (just as, I would say, "this morning the captain is sober" suggests that usually he isn't). Leavis discusses at considerable length the following two lines.

This City now doth like a garment wear
The beauty of the morning

"—isn't that a very loose simile? It was inspired, one suspects, by an easy and unscrupulous rime to 'fair', and its apparent first-to-hand quality suggests a very facile concern for 'beauty'". However, he says, "Any muffling or draping suggestion the simile might have thrown over the 'ships, towers, domes, theatres, and temples' is eliminated immediately by the 'bare' that, preceding them, gets the rime stress (so justifying, we now see, the 'wear' that it picks up and cancels)". Thus, it is the not-too-sympathetic Leavis who points out on the verbal level the paradox, "the duality of consciousness out of which this sonnet is organized: the City doesn't characteristically 'lie open', and the 'garment' it usually 'wears' the pall of smoke, is evoked so as to be co-present, if only in a latent way, with the smokelessness" (p. 243).

Leavis makes an additional comment on this simile, which is a right step in the direction of my analysis above, but it fails to become what it might have been. "Looking back, we realize now that 'like a garment' has, after all, a felicity: it keeps the City and the beauty of the morning distinct, while offering to the view only the beauty". In terms of the present argument, I suppose he means something like this. In a straightforward statement like "This morning the City is beautiful"[2] we get a compact view of a certain state of affairs in the city. Wordsworth, however, transforms the adverbial of time into an independent abstract noun and the predicative adjective into another abstract noun. By linking the abstraction "beauty" to the abstraction "morning" by the genitive link "of", and the phrase "the beauty of the morning" to the concrete noun "the City" by the predicate "wear", and by manipulating "beauty" rather than "morning" into the referring position, he loosens the relationship between the City and its attributes. By inserting the simile "like a garment", he

[2] Though I am using here transformative terminology, I don't mean to suggest that this is the core sentence on which the transformations are performed, only that it is an alternative formulation to which it is convenient to compare what Wordsworth actually wrote.

foregrounds the looseness of this relationship. But Leavis does not say so with so many words, and does not indicate what could be the aesthetic significance of all this.

In my conception, the above-mentioned manipulation of the abstract nouns in "the beauty of the morning" generates a supersensuous presence in a concrete immediate landscape, which is a good-making feature of poems. The list of unqualified, nonfigurative concrete nouns "Ships, towers, domes, theatres, and temples" is conspicuously irrelevant to this manipulation, and ought to have the effect of sheer prosaism; but it doesn't — owing to its place in the context and to its prosodic organisation.

Logical thinking, creative thinking, emotions, perceptions, memories are all streams of information of varying intensity, varying degrees of organisation, and varying degrees of immediacy. Psychologists speak of convergent-thinking and divergent-thinking abilities. Logical thinking is convergent and displays definite direction; creative thinking is divergent (Guilford, 1970: 180). Emotions are more divergent, less organised, more diffuse and display some general tendency rather than definite direction. There is no fixed point of disorganisation on this continuum where logical thinking turns into creative thinking, and creative thinking into emotions (cf. Duffy, 1968: 138). Perception can be defined as the process of immediate experience in or¬gan¬isms, related to sensation. Among other things, responses must occur at the time the sensory material is received, that is, in a concrete, immediate situation, and must not be based on complex and abstract inferences. As experience becomes less immediate and the amount of inference by the organism increases, thought processes have become involved (cf. Barbara B. Lloyd (1972: 19).

Typically, abstract nouns denote compact concepts, and are related to logical thinking. But in certain conditions they may be experienced as immediate perceptions, as when in the topicalized attribute construction (the ABSTRACT of the CONCRETE) they denote some quality drawn away from the noun in which it is grown together with other qualities. Having no stable visual boundaries, as we have seen, they may smoothly fuse with objects that have or lack stable visual boundaries, generating diffuse, soft focus. Thus they may become verbal imitations of emotions. That is why Wordsworth's "This City now doth, like a garment, wear / The beauty of the morning" is so powerful. The list of unqualified, nonfigurative concrete nouns in line 6 of Wordsworth's sonnet, in turn, reinforces the immediate concrete situation, and thus amplifies the sense of immediate perception.

The sonnet's versification has an outstanding divergent structure, displaying structural resemblance to emotional processes, as noted above. There are two remarkable enjambments of a very rare type in the octet. The line "Dull would he be of soul who could pass by" appears to coincide with one self-contained sentence, ending at the same point. "By" is the stressed syllable of the collocation "pass by", and effectively closes the line. The

sequel, however, changes all this after the event. The phrase "who could pass by / A sight so touching" reopens both the closed sentence and the closed line, not only by the very enjambment, but by inherently changing the verb structure too. Now the word "by" loses its lexical stress, and is subordinated to "a sight", so that the last strong position of the line is not confirmed now by a lexical stress. The same happens to the line "Ships, towers, domes, theatres, and temples lie", which too appears to coincide with a whole, selfcontained sentence. Here too the verb "lie" bears lexical stress and effectively closes the line with a stressed syllable in the last strong position. The phrase "lie/Open" does not merely reopen the already closed verse line and sentence, but, again, subordinates after the event the stress of 'lie" to that of "open" ("lie" becomes an unstressed copular verb, that links the subjects to the predicate "open"). William Empson, in his *7 Types of Ambiguity* called such ambiguous syntactic structures "double syntax". We might add here that such double syntax may or may not convey two different meanings; here, for instance, it only renders the syntactic and versification structure less distinct, generating a psychological atmosphere of uncertainty that contributes to the poem's emotional character.

Of all the complexities of this poem's versification Leavis notices only the second one of these enjambments. He observes that in "ships, towers, domes, theatres, and temples"

Lie
Open

"—the fact is made present as a realized state in the reader's conscious¬ness by an expressive use of the carry-over (the 'lying open' is enacted) and by a good rime which, picking up the resonance of 'lie' with an effect of leaving us where we were, enhances the suggestion of a state". The parenthetic comment "the 'lying open' is enacted" suggests an ambiguity involving a first order statement (ships, towers etc. lie open), and a metalinguistic statement (the line ending lies open). This seems to be the reason that Leavis passes by the other enjambment without noticing it: there he cannot point out such an ambiguity. I seriously question, however, the psychological reality of this ambiguity. As I said in the introduction, poems have not only structure and meaning, but also perceived qualities. A leap from first order language to metalanguage in an ambiguous expression enhances the incongruity of the two unrelated meanings reconciled in it and, as suggested above, is usually perceived as witty, as in

If Chrystal Streams with pleasing Murmurs creep,
The Reader's threaten'd (not in vain) with Sleep.
Pope: An Essay on Criticism

Here too we have a first order statement (The Reader's threaten'd with extreme boredom), and a metalinguistic statement (The Reader's threaten'd with the

hackneyed rhyme-word "sleep"). If the reader perceives a witty quality in Wordsworth's sonnet, Leavis' construal of the enjambment has for him psychological reality. If the reader perceives an emotional quality, the complex process of blurring I have pointed out in both instances of enjambment may be of decisive importance.

In the line "Ships, towers, domes, theatres, and temples lie" the mapping of syllables to metrical positions is quite problematic too. There are eleven syllables in this line, but only ten metrical positions available. Obviously, at one point, two syllables must be assigned to one metrical position. According to the Halle-Keyser rules for disyllabic occupancy of metrical position, there are two points in this line that are eligible for such an assignment. One may assign the two syllables of "towers" to one metrical position, obtaining a caesura after the sixth position, or the first two syllables of "theatres", obtaining a caesura after the fourth position. According to the Halle-Keyser generative theory of metre both would result in a metrical line; according to Paul Kiparsky's generative theory of metre only the former possibility would result in a metrical line. For me, both mappings are acceptable but, for quite different rhythmic considerations which I won't detail here, I prefer the former assignment:

Shíps, tówers, dómes, théatres, and témples líe
w s w sw s w s w s

The accents on some vowels indicate lexical stress; the rest are unstressed. The w and s letters indicate the regularly alternating weak and strong positions in the iambic metre. Stressed syllables typically occupy strong positions, unstressed syllables — weak positions. This notation may foreground the points where the linguistic stress pattern and the pattern of metrical weak and strong positions converge or diverge. This line, as we may see, begins with four consecutive stressed syllables, followed by three consecutive unstressed syllables before it returns to metric regularity in the last three positions. It is, then, highly divergent, blurring the contrast between metrical downbeats and upbeats. Such a structure, again, generates a psychological atmosphere of uncertainty, contributing to the emotional character of the poem.

From the semantic point of view too this list has a blurring effect. Leo Spitzer (1969) pointed out that the plural has a "damping" effect. I explain this as follows. When you imagine a ship or a tower, you imagine a prototypical ship or tower. When you imagine ships, in the plural, you usually don't imagine one ship beside the other, but a fairly undifferentiated lump with a few differentiating signs of several ships (if you are explicitly requested to imagine ships in a row, you will be able to do that, but the ships will be more schematic). Now notice this: lumping together "Ships, towers, domes, theatres, and temples" in a small space may have an additional, similar damping effect. Cleanth Brooks too makes a brief comment to this effect: "the poet simply huddles the details together: […] We get a blurred impression—points of roofs

and pinnacles along the skyline, all twinkling in the morning light" (p. 5). However, Brooks's theoretical framework based on the language of paradox does not bring out the aesthetic significance of this blurred impression, whereas this impression is tailor-made for a theoretical frame work based on the emotional qualities associated with divergent structures and blurred gestalts.

When in the late seventies I was exposed to early brain research, I learnt that language is related to the left hemisphere of the brain, where information processing is sequential and compact; emotions and spatial orientation are related to the right hemisphere, where information processing is holistic and diffuse. I came to the conclusion that the concrete landscape and the deixis increase the role of the right hemisphere in processing the poem, where both spatial orientation and emotions are located, and information processing is holistic and diffuse (Tsur, 2003b; Tsur, 2008: 385–403). In this context, abstract nouns and gestalt-free and thing-free qualities have the advantage that they are more susceptible of being diffused than objects that have stable visual shapes. In Wordsworth's sonnet (and in much other Romantic poetry) the natural (or, in this case, the urban) landscape description arouses the orientation mechanism of the right hemisphere and turns the abstractions and gestalt-free qualities into a dim, diffuse atmosphere, displaying some structural resemblance to emotional processes.

Later I ran into an interesting problem in Louis Martz's book *Poetry of Meditation*. The first stage of Jesuit meditation is "the composition of place". The Jesuit masters emphasized that the success of all the meditation crucially depends on the proper performance of the composition of place. But neither Louis Martz, nor the Jesuit masters offer any explanation for this. In a paper written in collaboration with Motti Benari, we thought we had the clue for it. Meditation requires the voluntary abandonment of voluntary control, which is a rather difficult accomplishment. By increasing the role of the right hemisphere in information processing, such involuntary, nonconceptual, intuitive processes as emotions and spatial orientation are activated. When the paper was already accepted by *Pragmatics and Cognition*, I ran into a fascinating finding by Newberg et al. (2001) in neurotheology. By SPECT imaging of the brain of Tibetan meditators and Franciscan nuns at prayer, these researchers found that meditation was intimately related to the orientation association area. The emerging picture was much more complex than we initially thought and we had to substantially modify our analysis, but we clearly seemed to be on the right track (Tsur and Benari 2002; reprinted in Tsur 2003a).

At this point I thought I could rest because I have found a solution to my riddles. In my recent reading, however, I ran into some new, intriguing evidence. In my forthcoming paper "Elusive Qualities in Poetry, Receptivity, and Neural Correlates" (Tsur, in press) I quote, in a different context, evidence

from a group of researchers including Vittorio Gallese[3], that we tend to process paintings that depict natural scenes differently from paintings that depict human beings. Massaro *et al*. (2012) investigated, using eye-tracking technique, the influence of bottom-up and top-down processes on visual behaviour while subjects, naïve to art criticism, were presented with representational paintings. With different contents, namely, human or natural environment, different gazing strategies were deployed. Content-related top-down processes prevailed over low-level visually-driven bottom-¬up processes when a human subject is represented in the painting. Bottom-up processes, mediated by low-level visual features, on the contrary, particularly affected gazing behaviour when looking at nature-content images. In that paper I also bring, at some length, arguments to support the possibility that these findings can be extrapolated to the reading of poetry.

As to the different gazing strategies, I explain there that top-down processes proceed from the general to the particular, and are closely related to the actively organising mind; bottom-up processes, based on incoming data from the environment to form a perception, are closely related to the passively receiving mind. To put it simply: the actively organising mind organizes percepts into objects and situations. Diffuse percepts appeal to the passively receiving mind. When we start with the perception of a solid unitary object and then break it down to its constituent parts, it is a top-down process. When we begin with sensory information coming in and then construct a solid object, information-processing is bottom-up. First we are exposed to uncategorised sensory information, and only later (later in milliseconds) do higher processes take control. Such precategorial sensory information has the potential to form a diffuse emotional stream of information owing to which some poets prefer to express emotions through nature descriptions.

In literary reading, it is ultimately the reader who decides upon the reading strategy; but there are in the text elements that may call for one strategy rather than the other. Let us return for a moment to Apollinaire's verse line. Here objects with stable characteristic visual shapes of humans and animals dominate the scene. In the architectural constructs, Eiffel Tower and bridges, only one stable visual feature is foregrounded: uprightness and horizontality, respectively. The reader has no option at all to choose "bottom-up processes, based on incoming data from the environment to form a perception". In Wordsworth's sonnet, by contrast, the abstractions and gestalt-free qualities are apt to become diffused by the divergent structure as well as through the space processing activities of the right hemisphere of the brain, as diffuse, elusive qualities, amenable to "bottom-up" processing.

[3] Vittorio Gallese is one of the discoverers of mirror neurons, and is professor at the Department of Neuroscience, University of Parma, and the Department of Art History and Archaeology, Columbia University, New York.

At this point, again, I thought I had reached the ultimate point of explanation. But then I ran on the web into another paper by the same group of researchers, including, again, Davide Massaro and Vittorio Gallese (Dio Dio, 2015), who investigated the neural correlates of aesthetic judgment. They presented artistically untrained subjects with sets of four kinds of paintings with which they were unfamiliar: Human Static, Human Dynamic, Nature Static and Nature Dynamic pictures. They were to make Aesthetic Judgments and Movement Judgments. Judgments were recorded on a scale ranging from 1 to 4, where 1 represented the lowest score (not beautiful at all/no movement at all) and 4 the highest score (very beautiful/very much movement). Note that the researchers were not interested in the accuracy of the aesthetic judgments (that is, not whether those pictures were deemed good or bad), but in what brain areas and, ultimately, what kinds of mental activity are involved in those judgments.

In general, their results show that the aesthetic judgment of human and nature content paintings involves a motor component processed, in both instances, by our cortical motor system through activation of parietal and premotor areas.While human-content paintings, particularly the dynamic ones, determine a motor resonance most likely evoked by the depicted actions, the aesthetic processing of nature-content paintings representing landscape scenarios would involve an additional sensory-motor component internally generated to favor imaginary exploratory behavior.

The names of brain areas used in this discussion are of no concern to us. What concerns us is the functions attributed to them by the authors. The functions attributed to the brain areas, in turn, suggest different styles of information processing with reference to Nature and Human contents.

The interaction effect found in the somatomotor region and superior parietal lobule, in fact, contrary to our predictions, highlighted enhanced activation for static compared to dynamic nature paintings, whereas the opposite pattern of activation was observed for human content paintings, with dynamic stimuli activating [the parietal lobule] more than the static ones. How can these apparently contradictory results be explained?

Embodied/motor processes are largely recognized for human content paintings through activation of mirror and mirrorlike areas (premotor, parietal, and superior temporal areas), as also found in the present study. When a human being is represented in a painting, the visible aspects of behavior (actions and emotions) would resonate with the viewer's motor experiences framing the beholders' involvement with the represented actions, which are best described in dynamic human portrayals. (Di Dio et al. 2015: 212–213)

Here I must mention mirror neurons, discovered, among others, by Vittorio Gallese. A mirror neuron is a neuron that fires both when an animal acts and when the animal observes the same action performed by another. Thus, when

we view the picture of a human involved in some activity, our relevant mirror neurons fire. When we view a nature content painting, we respond in a different information processing style. When a monkey grasps with two fingers a piece of food placed on a plate, certain neurons fire. When the monkey sees the same piece of food on the same plate grasped by a pair of human fingers, the same neurons fire. When the same piece of food is grasped with pliers, the neurons don't fire.

For nature content paintings, since there is no action description, actions are boundless and the freedom to explore in the first person gathers another, more ample, imaginative valence. […] This idea is […] in line with Berlyne's (1971) view that environmental perception is a process of exploratory behavior and information transmission […]. These views are congruent with greater activation observed both in somatomotor areas and the insula, which are strictly connected as described above, when attending to static nature stimuli that, in this study, mostly depicted landscapes, and namely environments that would favor exploratory behavior, against dynamic nature scenes mostly portraying falls and seas. (Di Dio et al. 2015: 213–214)

Within my theoretical framework, I interpret the first sentence of this paragraph as follows. Owing to mirror activities, "when a human being is represented in a painting, the visible aspects of behavior (actions and emotions)" control and delimit the viewer's response, rendering it compact, restricted. Dynamic nature paintings do not elicit similar responses (just as grasping with a plier does not elicit a response comparable to the one elicited by grasping with fingers).

The freedom to explore static nature content paintings allows the viewer to pick up subtle, elusive, diffuse sensory information. Hence the emotive effectiveness of the description of the physical environment, precisely when no human emotions are attributed to them. I must admit (and Leavis certainly would agree) that, indeed, in Wordsworth's sonnet the speaker's effusion does detract from this effectiveness; but the physical descriptions speak for themselves.

With the "Westminster Bridge" sonnet we apparently have a problem. It is not a "nature content" poem, but an urban landscape description. But, as we have seen, the authors themselves place their discussion in a wider context, Berlyne's notion of *environmental perception*, that would certainly include urban landscape too. This, in turn, would be in line with my foregoing discussion of space perception and orientation.

Summary and conclusions

Analytic philosophers (e.g., Beardsley, Weitz, Margolis) distinguish three kinds of critical activities: description, interpretation (or explanation) and

evaluation. One may describe a poem's meaning or versification structure with considerable certainty. The description of the perceived effects of a poem may be controversial, but it is still a description of what we directly perceive. As Sibley suggested, we directly perceive that a work of art is balanced or delicate, just as we perceive that the book is red by looking and that the tea is sweet by tasting. The logic of interpretation is much looser: its typical predicate is "plausible"; and where *x is true* and *y is true* are incompatible, *x is plausible* and *y is plausible* are not incompatible. In interpretation, when on the descriptive level one discovers two or more incompatible or unrelated elements, one may settle the arising incongruity by having recourse to a "plausible" hypothesis. When one encounters a landscape description and some emotional qualities, one may have recourse to a "plausible" hypothesis derived from human cognitive processes, to relate the perceived qualities to the poetic structures in a principled manner. The main business of the present paper was to offer, step by step, a wide range of cognitive and brain processes relevant to establishing a plausible relationship between emotional qualities and landscape descriptions (natural or urban) that abound in such typically nonemotional linguistic elements as abstract nouns and unqualified, nonfigurative, concrete nouns.

Evaluation poses no problem to impressionist critics; but analytic critics begin to stammer when they come to explicit evaluation. The analytic philosopher, Monroe C. Beardsley, surveyed all the evaluating terms used in history, based on internal evidence of works of art. He found that all the reasons given for a positive evaluation of a work of art can be grouped under three headings: unity, complexity and some intense human quality. He called these "the General Canons of Evaluation". In our case, the formula "the balance or reconciliation of opposite or discordant qualities" would take care of unity and complexity. But in all my university studies I received no tools to handle intensive human quality. I claim that in the foregoing discussion I have pointed out one mode of the principled handling of intensive human qualities in poetry. My analytic work is strictly descriptive and interpretative in the above sense. But when placed in the perspective of the General Canons of Evaluation, it becomes evaluative too.

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