The case for Kittler: considering ekphrasis as recursion

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ABSTRACT   Friedrich Kittler's media history is rarely employed by humanities scholars, who are often alienated by his disregard for literary content or humanistic concerns. This article makes the case for engaging with Kittler's theories as a natural extension of the materialist turn common to a number of humanities disciplines. Here, I assemble a 'toolkit' from Kittler's ideas of recursion and transposition, and the study of cultural techniques that has flowed from his works, in order to propose a new way to conceive of ekphrasis and approach ekphrastic verse. I -position ekphrasis as an informative example of recursion in action. I compare Kittler's media history—and the insights yielded by the tools it offers us—to some of the most influential studies of ekphrasis and ekphrases, showing how a Kittlerian approach can shine a new light on the genre. I also offer a short illustrative example of applying these tools to ekphrastic work by analyzing Dante Gabriel Rossetti's 'A Sea Spell', by which I also hope to demonstrate how Kittler's ideas can assist twenty-first-century scholars in bridging the gap between our own medial situation and those in which our objects of study were produced.

Keywords   ekphrasis, Friedrich Kittler, media history, recursion, Dante Gabriel Rossetti, double works

In his afterword to the second printing of *Discourse Networks 1800/1900*, German media historian Friedrich Kittler laments that 'traditional literary criticism' has investigated 'everything about books except their data processing', and that the 'materialism' of discourse analyses has eschewed the 'elementary datum' that literature 'processes, stores, and transmits data'.[1] In the decades since that criticism, materialist approaches have flourished in the humanities, including methodical archival work and studies informed by book history in literary scholarship, as well as a focus on 'materialities' and 'materials against materiality', 'the stuff that things are made of'.[2] Yet, despite this increased attention to material culture, Kittler's criticism still carries some force. Most materialist approaches to literature remain fundamentally sociological in their concerns, asking how texts were made, packaged, and sold, and for what price, or how and when they were read, and by whom, with a particular interest in uncovering how texts served marginalized communities. Such approaches have been fruitful, and remain valuable lines of enquiry, but they have not drawn us closer to understanding the processing, storage, and transmission of data by literature as a medium.

While some groups of scholars, such as the V21 Collective, now move towards formalism as a response to the continuing sociological impulse of literary studies, I propose a different corrective that answers Kittler's criticism directly. I argue for applying a theoretically informed methodology that interests itself in media's own logic(s), and not merely in the content or consumption of media as commodities situated in a set of economic and other power relations with individual agents. Such an approach can enrich our understanding of our chosen objects of study by illuminating how they in themselves operate, as well as offering new avenues for interrogating those objects by drawing literary studies into a set of new approaches and concepts.

In making this methodological intervention, it would be churlish not to turn to Kittler's own work to address the media logic of literary texts. Kittler's media history has not been much used in literary studies, in part because his strident focus on the technical or mechanical over the human can be alienating.[3] He is scathing of those who engage in 'a trivial, content-based approach to media',[4] and his own attention to literary works is indeed uninterested in the bulk of their content.[5] I suggest that, when our initial sense of umbrage has subsided, Kittler's media history has much to offer the arts and humanities. Here, I marshal some of the tools that Kittler's work offers us and demonstrate how that toolkit can be applied to ekphrasis, and in particular ekphrastic verse.

On the basis of the axioms that (1) 'information'—the content of a message—'always has a material substrate'; and (2) 'by their nature media conceal themselves' and their operations, Kittler's theory warns us that 'relying on concepts such as understanding and subjectivity [makes us] victims of a systematic deception'.[6] For example, in *Optical Media*, Kittler draws on Hans Blumenberg's discussion of the 'postulate of visibility'[7] to suggests that technical media 'destroy' the idea that 'that which exists also allows itself in principle to be seen'.[8] Instead, he suggests, media conceal themselves and their actions.

Literary scholars have always recognized the deception inherent in texts that make us feel, think, and respond in certain ways. In an effort to propose a fresh way to get beyond or behind this deception, I offer a short summary of Kittler's thinking as it might be most relevant to those who study literary texts and their histories. While Kittler's œuvre is rich in off-the-cuff allusions and intriguing philological insights, my précis here focuses on two of the most fruitful but underused ideas flowing from his work: recursion and cultural techniques.

Geoffrey Winthrop-Young has done more than perhaps any other individual to make Kittler's work accessible to an Anglophone audience, and for a comprehensive summary of Kittler's thinking, it is to his work that readers should turn. In broad terms, we can characterize Kittler's œuvre as tripartite. Between the mid-1970s and early 1980s, he focused on discourse analysis and literary texts, developing his concept of discourse networks: the 'technologies and institutions'—such as texts, photographs, archives, and museums—'that allow a given culture to select, store, and process relevant data', a crucial subset of which is the technical a priori of our medial and technological situation.[9] Between the early 1980s and the turn of the millennium, he dealt with media technologies, and increasingly digital technologies, focusing on the technical a priori of human cultures, which might best be conceived of as the medial and technological components of a discourse network.[10] Post-millennium, he began to take a genealogical approach to mathematical and musical notations systems. An intended tetralogy, *Musik und Mathematik*, remained incomplete on his death, but focused particularly on ancient Greece in a turn that Hans Ulrich Gumbrecht has described as a sort of existential crisis in the face of Kittler's 'cold diagnosis of the media-historical present' as excluding the subject.[11]

Across these three phases, Kittler combined in varying proportions three schools of thought: Lacanian psychoanalysis; Foucauldian discourse analysis; and Nietzschean philosophy. Kittler shares Michel Foucault's interest in historical ruptures, but deprecates Foucault's focus on 'man' as subject and seeks to extend Foucauldian discourse analysis beyond its mid-nineteenth-century conclusion to make it useful for theorizing post-print technologies. While remaining 'radically historical',[12] Kittler modified Foucault's work on the effects of technology in disciplining the subject by insisting on the inseparability of effects and causes, reprioritizing technologies. As part of decentring the subject, Kittler deployed Friedrich Nietzsche's view of corporeality cut adrift from consciousness,[13] alongside Jacques Lacan's 'demystification of subjective claims to autonomy'.[14] This combination highlights the importance of both the somatic and the systematic to Kittler, the experience unmediated by consciousness, and the structuring forces that are concealed by illusions of individualism.

What little interest Kittler has generated amongst humanities scholars is usually focused on the concept of discourse networks or his technological history in *Gramophone, Film, Typewriter*.[15] However, I look first to Kittler's late philhellenic turn and the concept of recursion that he developed as a 'new way of writing history',[16] and an alternative to all historiographies that cannot process media time.[17] Recursions comprise returns to a theme, trope, or image, and Kittler gives the example of Achilles's shield, which has been an object of ekphrasis repeatedly in Western literature. Studies of ekphrasis have sought to formalize generic concerns through subdivision,

such as John Hollander's distinction between actual and notional ekphrasis, and Peter Barry's division of actual ekphrases as either closed, open, or 'ajar', and of notional ekphrases into fictional and conceptual variants.[18] It strikes me, however, that such a fine gradation of ekphrases risks proving both endlessly productive and unilluminating. I suggest that we may better understand what ekphrasis is doing with art-objects, and with us as reader-observers, by instead focusing on ekphrases as forms of recursion, and so interrogating the genre's fundamental procedures.

Literary critics already employ numerous terms that bear similar meanings to 'recursion', such as 'reworking', 'repetition', 'return', and, in a more technically informed approach by Ana Rueda, 'refraction'.[19] Although each of these terms conveys a certain sense of correspondence to what we wish to describe, it is important to attend carefully to the appropriateness of our critical metaphors, and in particular that we recognize their disadvantageous connotations as well as their possibilities. Rueda's 'refraction', for example, highlights distortion, a bending or twisting of light between the source and a later author, as well as suggesting that that twist can be precisely calculated, and that it takes place at a medial boundary. These suggestions may, in certain circumstances, be highly useful, and Rueda's examination of the myth of Pygmalion in a variety of contexts employs the metaphor well. On the other hand, the metaphor makes it more difficult to probe a sequence of events, or to conceive of the distinction between literal medial boundaries, such as ekphrasis's attempt to render visual data in a verbal medium, and metaphorical medial boundaries between authors, sculptors, painters and so on.

Here, I argue for the utility of Kittler's particular term, which highlights the iterative process itself, rather than its outcomes or the individuals involved. 'Recursion' is adopted from mathematics and computer science. The repeated application of a procedure to successive results, it foregrounds active procedures, not people. We might compare this with J. Hillis Miller's insight that 'reading or looking' 'seem to complete a purpose that is not so much that of the writer or painter as a need intrinsic to the works themselves'.[20] The 'purpose' and action of that work—that is, the procedure by which it might accomplish its purpose—is not codified by Miller, but Kittler's concept of recursion provides some of the tools necessary for us to do so.

Kittler did not fully theorize recursion before his death in 2011, but the concept has been elaborated on by media theorists, including in a 2009 collection dedicated to examining how it might be developed and used.[21] Practically, the concept may best be understood by considering its commonalities with the genre of ekphrasis. Just as Kittler explained recursion using the example of Achilles's shield, so that object serves as a keystone for studies of ekphrasis. Valentine Cunningham argues that ekphrases that recur to that art-object—either the 'original' ekphrasis of Homer or another—function as a 'kept-up celebration and

exemplification of the power of art', 'keep[ing] the western *imaginaire*' 'alive'.[22] However, he also notes that this 'plenitude of presences' in literature is effectively 'an affair of absences, prompting responses, meanings that flout the exactitudes claimed for them'.[23] That is, the technical failure of ekphrasis fully to 'presence' Achilles's shield for the reader 'prompts', apparently without human intervention, further recursions, further ekphrases that draw on those which have gone before, as the same procedure is repeatedly applied to intermediary results. These further recursions bear new 'meanings' that 'flout the exactitudes claimed for them', refusing merely to repeat, (perhaps) incapable of ever doing so.

Kittler conceives of these new meanings not as the effects of individual creative genius, per the Romantic theory of literary creativity, but as in some way pre-programmed, the inevitable results of the recursive procedure itself. Yet, it would be a mistake to read this 'pre-programmed' as meaning either predictable or unchanging. Recursion does not mean technodeterminism. Instead, as Niklas Luhmann notes, there is a place in recursion both for the mechanism and the subject. This is because recursions are not 'Output-Is-Input-Mechanisms' but allow 'an observer in the system' to see 'past and future simultaneously'.[24] This makes observers—in the case of ekphrastic verse, readers—not masters of recursion but mere witnesses thereto.

Kittler gives the example of the story of *The Iliad* re-presented in the sirens' song in *The Odyssey*. The narrative of the fall of Troy is written again, but with a new output in the form of song rather than epic. Hearing the song, Odysseus, the observer within the narrative, sees both the past, the epic battle, and the future, mythic representation thereof (a duality to which I shall return below). Thus, recursion's 'algorithms that command repetition without themselves containing' or pre-determining it 'result in something different'.[25] The prior meanings of the battle for Troy are non-identical with the future meanings that Odysseus can foresee but that have not yet been achieved. In Cunningham's terms, 'meanings' elude 'exactitude' because each ekphrastic text, read or imagined, is merely an intermediary result in an ongoing chain.

Some literary critics have linked this constant state of flux to human maturation, such as Stefano Evangelista, who suggested that the 'meaning' of art-objects is 'unstable as they are subjected to vital cycles of rereading and semantic renewal by each successive generation of viewers'.[26] This line of thinking ties to a common-sense impression of each generation seeking to diverge from its parents', but does little to explain why the *same* art-objects are reinterpreted, rather than art-objects being discarded and replaced. The concept of recursion helps us understand both the fact of endurance—recursion is an unbroken chain waiting to be continued—and how 'rereading' (a telling verb) and 'semantic renewal' occur.

Before exploring how the concept of recursion has been further developed through the study of cultural techniques, I want to propose a new term that encapsulates Odysseus's

simultaneous vision of past and future meanings through recursion. Following Kittler in adopting terms from the hard sciences, we can describe this as an observer effect, borrowing from particle physics. In simple terms, the observer effect refers to changes that the act of observation makes on the phenomenon being observed, such as a photon disrupting the speed or path of an electron. Here, the act of observing the past meanings of a trope, theme, or art-object can alter its present and future meanings for the observer.

Recursion can thus be seen as a two-step process: a backward journey to recover past meanings, and a forward journey towards future meanings, which, as Markus Krajewski has argued, necessarily ends in a different present from the present wherein the recursion began.[27] If we take again the example of an observer in the system reading the description of Achilles's shield in *The Iliad*, the observer effect means that she may have in mind a set of past and present meanings relating to it, such as the Greek myths surrounding Achilles, W. H. Auden's ekphrastic recursion to the shield, and a recent critical reading of those two works. At the same time, she may also have in mind what the shield could mean in the future, perhaps a new poem or critical reading, or simply a momentary image of how the shield would look in a museum today.

François Hartog links another retelling of *The Iliad*—that of Demodocus in *The Odyssey*, who sings of Odysseus's experience to the returning hero himself—to Odysseus's individual struggle to take a historical perspective towards his own life. Hartog notes how the beginning of the bard's song results in a 'break', whereby 'the *klea andrôn* are transformed into the glorious deeds of "men of former times"'. Here, he suggests, *The Odyssey* 'seeks to juxtapose times' past and present, but 'cannot do so' because 'it sings of a return' that it is also at that moment witnessing.[28] Demodocus seeks, like all bards, to 'make everything co-present, embraced within a synoptic vision' that encompasses the present and 'a past without duration, a past which is simply over'. Odysseus's own presence introduces duration into *The Odyssey*'s understanding of the past, so that his '*nostos* disturbs' the bard's production of 'a past on demand, generated by the gap' Demodocus introduces as soon as he 'breaks into song'.[29] Odysseus's presence, and his tearful response to Demodocus's song, thus draws attention, perhaps for the first time, to the fact that recursions are not 'Output-Is-Input-Mechanisms', which Hartog reads as introducing a new sense of historicity.

These two recursions to *The Iliad* demonstrate the prospective variability of the observer effect's outputs. While an individual 'break' is generated by the initial phase of any recursion, the return journey to a different present collapses all variation into a single future meaning that then forms the observer effect and is conveyed forward as the next iteration of the recursion. Borrowing again, light-heartedly, we might call these variable future meanings Schrödinger's meanings, the fate of which is knowable only after the collapse of the many available observer effects into one.

In introducing the additional term 'observer effect', I follow the impulse to develop Kittler's 'residual', if well-concealed,

humanism to which the theory of cultural techniques also responds.[30] Bernhard Siegert cautions against thinking of cultural techniques as an 'anthropological turn', arguing that the concept 'is vehemently opposed to any ontological usage of philosophical terms: *Man* does not exist independently of cultural techniques of hominization, *time* [...] of cultural techniques for calculating and measuring time; *space* [...] of cultural techniques for surveying and administering space; and so on'.[31] However, in the round, analyzing cultural techniques does offer an 'escape route' from Kittler's apparent anti-humanism or technodeterminism, allowing more traditional objects and modes of literary analysis to come back into view. As Winthrop-Young notes:

> [T]o speak of operations and connections allows those inspired by the Kittler effect to speak of practices without saying society; to readmit human actors allows them to speak of agency without saying subjects; and to speak of recursions allows them to speak of history without implying narratives of continuity or social teleology.[32]

The turn towards cultural techniques can thus be seen as a fulfilment, in different form, of the turn that Kittler's early twenty-first-century work took towards 'an existential opulence' that might frame the beginning of linear writing in ancient Greece as 'a more upbeat counterpoint' to his more negative earlier work.[33] Indeed, Bernard Dionysus Geoghegan notes a 'certain planned obsolescence' in Kittler's 'correlating [of] cultural form and historical change with the material specificities of distinct media platforms', suggesting that the turn flows from Kittler as much as representing a turn away from him.[34]

Winthrop-Young and others provide concise genealogies of the term *Kulturtechniken*,[35] which I will not rehearse. In summary, the most influential descriptions of cultural techniques yield the following definition: cultural techniques comprise recursive chains of operations that take place 'outside' the relationship between the sender and receiver of any act of communication, rather than being necessarily directed by either party towards the other.[36] Studies of cultural techniques have addressed agricultural techniques such as ploughing, the use of doors to produce distinctions of inside/outside and human/animal,[37] processes such as law making,[38] and acts such as servants' courtly coughing.[39] However, as a common theory of cultural techniques emerges, theorists remain wary of applying that theory to questions of literary texts, readers, and authors.[40] Despite an intended move away from Kittler's most anti-humanistic positions, there remains a certain skittishness about literary works in particular, and a preference for general, programmatic, or theoretical statements over sustained analyses of specific cultural artefacts. This is true even of Thomas Macho's exploration of cultural techniques as 'second-order' techniques, 'limited to symbolic techniques that allow for self-referential recursions', such as writing that writes about writing itself, or films in other films.[41] Although Macho focuses on 'symbolic' and 'self-referential' media, he does not then explore

specific examples of writing about writing or painting depicting painting, instead swerving to discuss cultural techniques more anthropologically, focusing on Paleolithic hand prints, seals and stamps, and coats of arms.

In asserting that the notion of cultural techniques can help us think about ekphrasis, I propose that encountering an art-object—either 'in the flesh' or through a text—is an operation in the mathematical sense, such as addition or subtraction: a process in which something is altered or manipulated according to set formal rules. Each encounter begins where the previous encounter ended, so these operations take place recursively.

Moreover, that recursive loop is self-directed, obeying internal commands rather than taking place under the direct control of the observer or the art-object. Let us think again of that reader of *The Iliad* who knows also of the existence of Auden's work and many other recursions before and since, and who thus in some way must come to the epic, perhaps not for the first time, via that intervening material, whether she has read it all or not. It is perhaps easiest to conceive of the internal commands that guide recursion by following Cornelia Vismann in conceiving of cultural techniques grammatically. Thus, while 'objects [claim] the grammatical subject position' and 'grammatical persons (and human beings alike)' 'assume the place assigned for objects', 'cultural techniques [stand] in for verbs' and describe the object–subject relation outside of either's control.[42]

This approach can help us understand one of the key issues that has driven critical studies of ekphrasis in the past thirty years: the paragonal struggle between poetry and painting, which James Heffernan once called the 'most promising line of inquiry in the field of sister arts studies'.[43] Studies of ekphrasis often share with Kittler an emphasis on the independence of media, specifically the agency of images as active players in global culture, as in W. J. T. Mitchell's pivotal *Picture Theory*.[44] However, such studies understand the dominance of images over text somewhat differently. While Kittler's finally declares the paragonal 'struggle' over at the point at which digital media has overtaken all analogue forms,[45] be they written, visual or sonic, many studies of ekphrasis propose that the image, whether analogue or digital, remains the dominant media form because of our temptation to seek to reproduce it in writing. Cunningham highlights 'the imperative that literature seems to feel to picture such nonverbal items, to incorporate them into text, to have us picture them along with the writer [...] and their characters', an imperative that seems 'simply inescapable', especially in the light of Cunningham's repeated use of the metaphor 'picture'.[46] Similarly, Catherine Maxwell draws on her intuitions about the compulsive nature of encountering art-objects and describing those encounters in her argument that the art-object's 'magnetism' drives (what we can now call) the recursive creative process of authors such as Dante Gabriel Rossetti or Algernon Charles Swinburne.[47] Meanwhile, taking a more martial approach, of which Kittler

would surely have approved, Peter Wagner argues that 'Western culture' has used ekphrasis to 'limit [the] power' of the image by 'translat[ing] the pictorial into the readable, thus controlling and encircling it with words'.[48]

How should we make sense of this compulsion, a 'struggle' that involves literature always returning to art-objects without ever conquering them? If we understand encountering art-objects as a cultural technique, and we understand ekphrases as the outcomes of observer effects, producing new meanings from recursions to those encountered art-objects, then we can begin to understand the mesmeric attraction of those encounters as the necessary next step in the recursive chain that is directed not by us, but by the cultural technique itself.

Indeed, the cultural technique of encounter, our grammatical verb, may *create* the subject and object positions of 'observer' and 'art-object' (or vice versa). Following Kittler, writings on cultural techniques are heavily inflected with Lacanian thinking, and just as Kittler proclaimed that 'media determine our situation',[49] so cultural techniques are often understood to create that which appears to be a prerequisite for their existence.[50] For example, Vismann suggests that cultural techniques involve the 'self-management or auto-praxis of media and things, which determines the scope of the subject's field of action'.[51] Siegert in particular aligns cultural techniques with Michel Serres's model of the parasite where the parasite 'attaches itself' to a relation between sender and receiver, 'assum[ing] the position of the third' and the sender–receiver relation is not 'disturbed or even interrupted' by this attachment; rather, 'the deviation is part of the thing itself, and perhaps it even produces the thing'.[52] Thus, the cultural technique of encountering an art-object in a particular way might, 'catching on', give rise to a school of art appreciation that appears to dictate that particular mode of encounter, obscuring cause and effect. A visual channel is established via the (mind's) eye between perceived art-object and perceiving observer, but encounter serves as the third of this relation. An art-object may be seen by an unrecognizing eye, but encountering an art-object is a cultural technique whereby it is observed in a particular aesthetic way.

Etymologically implicit in the term 'cultural techniques' is that they offer a method of acculturation. Indeed, Wolfgang Ernst suggests that foundational cultural techniques such as reading, writing, and representing 'generate culture as a recurring and normative formation'.[53] Cultural techniques are particularly involved in how objects contribute to cultural formations, however. Krajewski argues that cultural techniques are 'designed to carry out an action that develops cultural efficacy in a specific way through the interplay of purposeful bodily gestures and the use of aids such as tools, instruments or other medial objects',[54] following Sybille Krämer's argument that through cultural techniques 'cognition' becomes 'a kind of distributive, and hence collective, phenomenon that is determined by the hands-on contact humans have with things and symbolic and technical artifacts'.[55] Indeed, as a generic term,

'cultural techniques' includes what Marcel Mauss has called body techniques (*techniques du corps*), such as American walking fashions.[56] Yet, ekphrasis may be the result either of a 'hands-on' encounter, or an imaginative one. The latter case, however, is merely the traces of the former, the neural pathways trained in 'hands-on' encounters imaginatively activated by the brain.

Thus, methodologically we might follow Vismann, who argues that 'the approach of cultural techniques' is 'to derive the operational script from the resulting operation, to extract the rules of execution from the executed act itself'.[57] In doing so, we might examine acts of encountering art-objects from accounts of gallery visits or descriptions of encounters with art-objects, such as in the fiction of J. K. Huysmans, Vernon Lee, or Edgar Allan Poe. It is to ekphrastic verse, however, that I suggest we turn because it is this genre alone that focuses entirely upon the writer's 'experience of encountering the work of art', accounting for subjective encounters of, and responses to, a static art-object by 'explicitly represent[ing]' 'representation itself'.[58] The genre, as '*the verbal representation of visual representation*', already hints at the procedures at work in the cultural technique of encounter.[59]

While Kittler argued, in accord with Marshall McLuhan, that 'the content of a medium is always another medium',[60] he also posited that media are invariable: 'a medium is a medium is a medium' and so 'cannot be translated'. This raises the question of *how* ekphrasis's 'verbal re[-]presentation' occurs. Kittler's general statement about how 'messages' are 'transfer[red] […] from one medium to another' resonates remarkably with the facts of ekphrasis. He suggests that such transfers 'always involves reshaping [the message] to conform to new standards and materials' and are 'transposition[s]' rather than translations, a common critical metaphor. While the latter 'excludes all particularities in favor of a general equivalent', the former 'is accomplished serially, at discrete points', 'reproducing the internal (syntagmatic and paradigmatic) relations between [the original medium's] elements' within the new medium. But because there is this medial difference, 'every transposition is to a degree arbitrary, a manipulation', leaving 'gaps'.[61]

This description of the transfer of data from one medium to another highlights, and in some cases immediately answers, many of the issues raised in criticism of ekphrasis, such as the fact that art-objects convey information synchronically—all of a painting's visual data can hit the observer's eye at once—while writing conveys information diachronically, in sequence, or the question of whether ekphrasis leaves a remainder (answered firmly in the affirmative here).[62] Kittler's description is more than a reframing, however. It also confirms that ekphrasis is a recursion, making plain to us that the experience of ekphrasis is not an event that must end as bleakly as Mitchell suggests, with the 'ekphrastic fear' that 'the difference between the verbal and visual representation might collapse and the figurative, imaginary desire of ekphrasis might be realized'.[63] Rather, ekphrasis leads us back to the past meanings of the art-object, but also suggests, through our observer effect, prospective future meanings for it.

Mitchell's model of the ekphrastic encounter as giving rise to first indifference, then hope, and finally fear, models a cycle that completes itself by returning always to the 'commonsense perception that ekphrasis', in the sense of a visual art-object materializing from a text, 'is impossible'.[64] However, if we instead see ekphrasis as but one instance of the cultural technique of encounter, which exists always in a recursive chain, then we can understand that the ekphrastic encounter is always productive, taking us through a repeated process, but giving rise to 'predefined variation', rather than returning us to the very same present from which we began.[65] The transmission of meaning is bound up with the production of new meanings, and both are by-products of medial self-processing.

As a concrete example of these tools in action, and like the reader of *The Iliad* who knows Auden, I can only offer a close reading freighted with knowledge of Kittler's own. I want to examine an ekphrastic poem by Rossetti that forms part of his set of double works: 'A Sea-Spell' (1870).[66] This poem is both recursively and ekphrastically complicated. As an ekphrasis, 'A Sea-Spell' is unusual because it precedes the art-object that it complements, which was painted in 1877, although of course Rossetti's vision for the painting may have been fixed much earlier than that. As a recursion, although it is thus now read alongside *A Sea-Spell*, it can also be juxtaposed with Rossetti's earlier work *Ligeia Sirena* and other poems and drawings relating to the story of Odysseus escaping the sirens. J. B. Bullen suggests that *A Sea-Spell* is Rossetti's 'second attempt at a siren picture' following *Ligeia Sirena*, and that in 'A Sea-Spell', the 'castrating harpy' of *Ligeia* has been reduced to 'meditative gentleness as she listens peacefully' to her own music.[67] However, the poem offers a version of the siren far more in keeping with the aggressive *Ligeia* than its later namesake.

The title of the poem primes us to expect to meet, in our visionary encounter while reading, a siren-like figure, as well as the threat of enchantment and the loss of control usually associated with such a figure. We approach the poem's first line waiting to be spellbound, and our expectations of meeting a siren are quickly met: musicality is invoked by the poem's opening reference to 'her lute', which affiliates the 'spell' with the 'sweet-strung' music of that instrument, and we learn that she is on land but, at the coast. The poem's title, which attributes the spell to the sea, thus seems to refer to the experience of it more than her performance of it, positioning us as prospective victims before the first sentence has even been completed.[68] We here thus accompany, imaginatively, Odysseus and his men, but also Kittler and Ernst in their 2004 trip around the Sirenusas, off the Amalfi coast, to explore and confirm the 'acoustic real(ity)' of Homer's description of the sirens' song.[69]

Interestingly, the 'sweet-strung spell' of Rossetti's siren seems to arise not from the instrument and its strings, but instead from the 'weav[ing]' of the siren's fingers 'between its chords'.[70] While the verb 'weave' plays on the Penelope

trope to emphasize the Homeric undertones of the poem, it also draws attention to the process by which the spell is produced, which relies not on the obvious affordances of the medium at the siren's disposal, its 'chords', but instead on the gaps between them. Her music-making is, we thus suspect, in some way a transposition, perhaps of her song to the wordless form of instrumental music.[71] The 2004 archaeo-acoustical experiments involving two opera singers on the Sirenusas emphasized the vocalic nature of the sirens' song, but this transposition can be understood in the context of a Rossettian double-work, which needs to be able to show as well as to describe the instrument from which the song is generated.

The sonnet's reflections upon its own process of transposing and transmitting messages to the observer continues with the suggestion that the siren herself, apparently the mistress of this 'spell', is also in some way spell-bound. The 'swell' of 'wild notes' that influence the 'sea-bird' influence her also; she 'sinks into her spell', her subjectivity submerged into the music being produced, which becomes increasingly powerful as a result.[72] We have a sense of the siren as a subject being caught in a cultural technique or recursive chain, just as we are, a witness rather than a controlling presence.

This becomes apparent if we tease apart the rhetorical questions that dominate the second quatrain of the octave:

> But to what sound her listening ears stoops she?
> What netherworld gulf-whispers doth she hear,
> In answering echoes from what planisphere,
> Along the wind, along the estuary?[73]

The answers to these questions emerge only if we allow ourselves to imagine the soon-to-be future, to experience an observer effect. The poem gives us only the barest hint of the 'netherworld gulf-whispers' that the siren might hear as part of her own observer effect, her own imagining of future meanings for her song. Of all of the 'creatures of the midmost main' that 'throng' to her, it is only the 'fated mariner' who will 'die'.[74] Those creatures that, such as the 'sea-bird', come to listen but do not die, are intermediate results in a recursive chain that proceeds towards the death of the 'fated mariner' as a future meaning.

Thus, we can answer the sonnet's questions by suggesting that the 'answering echoes' that the siren 'hear[s]' are imagined responses from the 'planisphere' that 'answer' her intensified song that draws the mariner to his death, and so into the 'netherworld'. The sounds for which she listens are not 'echoes' in the strict sense of the word; they are not repetitions of her song returned to her. Rather, they are future meanings of her song that she experiences in a visionary way while under her own spell, intensifying her music and, in turn, making true that which she had imagined.

In 'A Sea-Spell', the poem thus seems to reflect, self-reflexively, upon recursion and the observer effect. The poem creates a future meaning of the trope of the sirens, not as fearful man-eaters, but as musicians enchanted by their own song and experiencing their

own observer effects. Rossetti's divergence from the traditional representation of multiple sirens, on which Kittler also insisted, supports this; to represent more than one woman playing would suggest that they play for each other, reducing our willingness to interpret the siren as listening imaginatively to an 'answering' song that comes from beyond.[75]

This example from a Rossettian double-work, then, I hope indicates the merits of understanding ekphrasis as a process of transposition, and ekphrastic encounters with art-objects as a cultural technique that takes place within a recursive chain of intermediate results that display 'predefined variation' owing to the operation of the observer effect. This framework sensitizes us to the impossibility of repetition, and so to the gaps of transposition and variations of recursion, while also allowing us to see commonalities between techniques that might appear radically different, such as reading an ekphrastic poem, and playing a 'sea-spell', and seeking to test the veracity of an ancient legend.

More broadly, I hope to have demonstrated that Kittler's media history offers useful methodological tools, if we are willing to grapple with the task of bringing it into dialogue with literary texts beyond the most obviously compatible periods and genres, such as post-modernism or science fiction. In his last public address, Kittler proposed that media history offers 'a singular opportunity' 'to continue to think and continue to pass down the history of Europe as our history'.[76] As the study of the humanities strives to demonstrate its ongoing relevance to the economic, social, and technological concerns of discourse network 2000, both in Europe and globally, such methodologies that can create linkages between traditional objects of study and their discourse networks, and our own medial situation, have a great deal to offer us.

NOTES
1 – Friedrich Kittler, *Discourse Networks 1800/1900*, trans. Michael Metteer and Chris Cullens (Stanford: Stanford University Press, 1990), 369–372, at 370.
2 – Tim Ingold, 'Materials against Materiality', *Archaeological Dialogues* 14, no. 1 (2007): 1–16, at 1.
3 – Geoffrey Winthrop-Young addresses whether Kittler is an anti-humanist or technodeterminist in Geoffrey Winthrop-Young, *Kittler and the Media* (London: Polity, 2010).
4 – Kittler, *Optical Media*, trans. Anthony Enns (London: Polity, 2010), 31.
5 – As in Friedrich Kittler, 'Dracula's Legacy', trans. William Stephen Davis, *Stanford Humanities Reviews* 1, no. 1 (1989): 143–73.

6 – Stephen Sale and Laura Salisbury, 'Introduction', in *Kittler Now*, ed. Stephen Sale and Laura Salisbury (Cambridge: Polity, 2015), xiii–xxxix, at xxx.
7 – Hans Blumenberg, *The Legitimacy of the Modern Age*, trans. Robert M. Wallace (Cambridge, MA: MIT Press, 1983), 361–75.
8 – Ibid., 39.
9 – Kittler, *Discourse Networks*, 369.
10 – For example, Friedrich Kittler, *Literature, Media, Information Systems*, ed. John Johnston (Amsterdam: Overseas Publishers Association, 1997).
11 – Hans Ulrich Gumbrecht, 'Media History as the Event of Truth: On the Singularity of Friedrich A. Kittler's Works', in *The Truth of the Technological World: Essays on the Genealogy of Presence*, trans. Erik Butler (Stanford: Stanford University Press, 2013), 307–30, at 319.
12 – Winthrop-Young, *Kittler and the Media*, 144.
13 – This attraction intensified during the second phase of Kittler's work when he increasingly focused on the history of media and military technologies.
14 – Gumbrecht, 'Media History', 311.
15 – Friedrich Kittler, *Gramophone, Film, Typewriter*, trans. Geoffrey Winthrop-Young and Michael Wutz (Stanford: Stanford University Press, 1999).
16 – Friedrich Kittler, *Musik und Mathematik I/2: Eros* (Munich: Fink, 2009), 245 (present author's translation). The original reads: 'Für diese neue Art, Geschichte zu erschreiben, gibt es nur eine Weise, einen Namen: Rekursionen.'
17 – Winthrop-Young, 'Siren Recursions', in Sale and Salisbury, *Kittler Now*, 71–94.
18 – John Hollander, *The Gazer's Spirit: Poems Speaking to Silent Works of Art* (Chicago: University of Chicago Press, 1995); Peter Barry, 'Contemporary Poetry and Ekphrasis', *Cambridge Quarterly* 31, no. 2 (2002): 155–65, at 156.
19 – Ana Rueda, *Pigmalión y Galatea: Refracciones modernas de un mito* (Madrid: Fundamentos, 1998).
20 – J. Hillis Miller, 'What do Stories about Pictures Wants?', *Critical Inquiry* 34, no. 2 (2008): 59–97, at 59.
21 – Ana Ofak and Philipp von Hilgers, eds, *Rekursionen* (Berlin: Fink, 2009).
22 – Valentine Cunningham, 'Why Ekphrasis?', *Classical Philology* 102, no. 1 (2007): 57–71, at 58, 66.
23 – Ibid., 71.
24 – 'Rekursivität liegt dann nicht nur in einem Output-wird-Input-Mechanismus', 'sondern darin, daß ein Beobachter im System […] zugleich Vergangenheit und Zukunft sieht'; Niklas Luhmann, 'Antwort', in Ofak and von Hilgers, *Rekursionen*, 47–50, at 49 (author's own translation).
25 – Winthrop-Young, 'Siren Recursions', 75.
26 – Stefano Evangelista, 'Vernon Lee in the Vatican: The Uneasy Alliance of Aestheticism and Archaeology', *Victorian Studies* 52, no. 1 (2009): 31–41, at 31.
27 – Markus Krajewski, 'The Power of Small Gestures: On the Cultural Technique of Service', trans. Charles Marcrum, *Theory, Culture & Society* 30, no. 6 (2013): 94–109.
28 – François Hartog, *Regimes of Historicity: Presentism and Experiences of Time*, trans. Saskia Brown (New York: Columbia University Press, 2017), 54.
29 – Ibid., 55.
30 – Having criticized Kittler's anti-humanism in *New Philosophy for New Media* (Cambridge, MA: MIT Press, 2004), Mark B. N. Hansen now locates a 'residual humanism' in Kittler's work as he 'cannot cease to see' '"humanism" everywhere in [his] method'; Mark B. N. Hansen, 'Symbolizing Time: Kittler and Twenty-First-Century Media', in Sale and Salisbury, *Kittler Now*, 210–37, at 210. An example might be Kittler's 'naked thesis' that 'we knew nothing about our senses until media provided models and metaphors', which does not deny the relevance of human senses, but takes a deep interest in them and thus attends to their technical a priori; Kittler, *Optical Media*, 34.
31 – Bernhard Siegert, 'Cacography or Communication? Cultural Techniques in German Media Studies', trans. Geoffrey Winthrop-Young, *Grey Room* 29 (2007): 26–47, at 30.

32 – Geoffrey Winthrop-Young, 'Cultural Techniques: Preliminary Remarks', *Theory, Culture & Society* 30, no. 6 (2013): 3–19, at 14.

33 – Hans Ulrich Gumbrecht, 'Mythographer of Paradoxes: How Friedrich Kittler's Legacy Matters', *Critical Inquiry* 42, no. 4 (2016): 952–58, at 957.

34 – Bernard Dionysus Geoghegan, 'After Kittler: On the Cultural Techniques of Recent German Media Theory', *Theory, Culture & Society* 30, no. 6 (2013): 66–82, at 68.

35 – Winthrop-Young, 'Cultural Techniques'; see also Geoghegan, 'After Kittler', 71–76.

36 – I draw on frameworks proposed by Krajewski, 'Power of Small Gestures', 98–99; Bernhard Siegert, 'Cultural Techniques: Or the End of the Intellectual Postwar Era in German Media Theory', trans. Geoffrey Winthrop-Young, *Theory, Culture & Society* 30, no. 6 (2013): 48–65, at 58–62; and Sybille Krämer, 'Culture, Technology, Cultural Techniques—Moving Beyond Text', trans. Michael Wutz, *Theory, Culture & Society* 30, no. 6 (2013): 20–29, at 27.

37 – Bernhard Siegert, *Cultural Techniques: Grids, Filters, Doors, and Other Articulations of the Real* (New York: Fordham University Press, 2015).

38 – Cornelia Vismann, 'Cultural Techniques and Sovereignty', trans. Ilinca Iurascu, *Theory, Culture & Society* 30, no. 6 (2013): 83–93.

39 – Krajewski, 'Power of Small Gestures'.

40 – Exceptions may be Edgar Landgraf's reading of Goethe's poetry, in suggesting that the lyric is a cultural technique that 'helps redefine how intimacy is communicated' and Verena Lobsien's analysis of the use of 'cultural techniques for the management of emotion developed in classical antiquity' in Elizabethan England, but both discuss cultural techniques only briefly; Edgar Landgraf, 'Intimacy, Morality, and the Inner Problematic of the Lyric', in *Goethe Yearbook 20* (2013): 5–24, at 6; Verena Lobsien, '"Stewed Phrase" and the Impassioned Imagination in Shakespeare's Troilus and Cressida', in *Love, History and Emotion: Chaucer and Shakespeare*, ed. Andrew James Johnston, Russell West-Pavlov, and Elisabeth Kempf (Manchester: Manchester University Press, 2016), 125–40, at 130.

41 – Thomas Macho, 'Second-Order Animals: Cultural Techniques of Identity and Identification', trans. Michael Wutz, *Theory, Culture & Society* 30, no. 6 (2013): 30–47, at 30.

42 – Vismann, 'Cultural Techniques and Sovereignty', 83.

43 – James Heffernan, *Museum of Words: The Poetics of Ekphrasis from Homer to Ashbery* (Chicago: University of Chicago Press, 1993), 1.

44 – W. J. T. Mitchell, *Picture Theory: Essays on Verbal and Visual Representation* (Chicago: University of Chicago Press, 1994).

45 – In his preference for addressing technical media over the 'old media' of painting and literature, Kittler highlights the fact that technical media are built deliberately to exploit the limits of the human senses specifically, such as film manipulating 'the abilities and inabilities of visual perception' through its 'standard use of alternating images'; Kittler, *Optical Media*, 38.

46 – Cunningham, 'Why Ekphrasis?', 57.

47 – Catherine Maxwell, *Second Sight: The Visionary Imagination in Late Victorian Literature* (Manchester: Manchester University Press, 2011). See, in particular, "An aching pulse of melodies: Dante Gabriel Rossetti's poetic magnetism", 21–67.

48 – Peter Wagner, 'Introduction', in *Icons, Texts, Iconotexts: Essays on Ekphrasis and Intermediality*, ed. Peter Wagner (Berlin: Walter de Gruyter, 1996), 1–40, at 31.

49 – Kittler, *Gramophone, Film, Typewriter*, xxxix.

50 – The distinction between 'media' and 'cultural techniques' is often blurry. Siegert defines cultural techniques as 'media that process the observation, displacement, and differentiation' of the distinctions that lie at the root of any culture; Siegert, 'Cacography or Communication?', 31. However, from the range of cultural techniques that have been explored, it seems clear that the term extends beyond storage or transmission media to include other material objects.

51 – Vismann, 'Cultural Techniques and Sovereignty', 84.

52 – Siegert, 'Cacography or Communication?', 33, citing Michel Serres, *The Parasite*, trans. Lawrence R. Schehr (Baltimore: Johns Hopkins University Press, 1982), 13. Serres goes further and suggests that 'we do not start out with an unimpeded exchange'; rather 'the parasite comes first'; ibid., 63.

53 – Wolfgang Ernst, 'From Media History to *Zeitkritik*', *Theory, Culture and Society* 30, no. 6 (2013): 132–46, at 135.

54 – Krajewski, 'Power of Small Gestures', 94.

55 – Krämer, 'Culture, Technology, Cultural Techniques', 26–27.

56 – Marcel Mauss, 'Techniques of the Body', in *Incorporations*, ed. Jonathan Crary and Sanford Kwinter (New York: Zone, 1992), 454–77.

57 – Vismann, 'Cultural Techniques and Sovereignty', 87.

58 – Hollander, *Gazer's Spirit*, xi.

59 – Heffernan, *Museum of Words*, 10 (original emphasis).

60 – Kittler, *Optical Media*, 31.

61 – Kittler, *Discourse Networks*, 265. To give only one example, Ernst-Peter Schneck discusses ekphrasis as translation in Ernst-Peter Schneck, 'Pictorial Desires and Textual Anxieties: Modes of Ekphrastic Discourse in Nineteenth-Century American Culture', *Word & Image* 15, no. 1 (1999): 54–62.

62 – Stephen Bann highlights the 'risky presumption that the visual work of art can be translated into the terms of verbal discourse *without remainder*'; Stephen Bann, *The True Vine: On Visual Representation and Western Tradition* (Cambridge: Cambridge University Press, 1989), 28. The basis of that presumption has been widely debated in literature on ekphrasis.

63 – Mitchell, *Picture Theory*, 154.

64 – Ibid.

65 – Winthrop-Young, 'Siren Recursions', 74.

66 – Dante Gabriel Rossetti, 'A Sea-Spell', in *Ballads and Sonnets* (London: F. S. Ellis, 1881), 328.

67 – J. B. Bullen, *Rossetti: Painter and Poet* (London: Frances Lincoln, 2011), 239–41.

68 – Rossetti, 'A Sea-Spell', ll 1–2.

69 – Wolfgang Ernst, 'Towards a Media-Archaeology of Sirenic Articulations: Listening with Media-Archaeological Ears', *Nordic Journal of Aesthetics* 48 (2014): 7–17, at 7. For a detailed exposition of the trip and its acoustic analysis, see Karl-Heinz Frommolt and Martin Carlé, 'The Song of the Sirens', *Nordic Journal of Aesthetics* 48 (2014): 18–33.

70 – Rossetti, 'A Sea-Spell', ll 2–3.

71 – She does not begin singing until later (ibid., ll 9–10), when 'full soon / Her lips move and she soars into her song'.

72 – Ibid., ll 3–4, 9.

73 – Ibid., ll 5–8.

74 – Ibid., ll 11–14.

75 – Kittler discusses the sirens as a duo in Friedrich Kittler, 'The Alphabet of the Greeks: On the Archaeology of Writing', in Butler, *Truth of the Technological World*, 267–74. The number of sirens varies in accounts that follow Homer, from two to five, and their names differ, but they are almost always plural.

76 – Friedrich Kittler, 'Farewell to Sophienstraße', trans. Bernard Dionysius Geoghegan and Christian Kassung, *Critical Inquiry* 42, no. 4 (2016): 959–62, at 962.