

SKIN DEEP? THE STUFF OF ADAPTABILITY AND THE INTERMEDIARIES OF SCIENCE

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Abstract

Rather than envisaging adaptation as ‘palimpsestic thing’ following Hutcheon (2013), this article investigates the generative and regenerative operation of *adaptability* determining the further becoming of any natural, as well as cultural production. By considering adaptability as process and condition of all biological and intercultural renewal – importantly including ‘big’ science and data – this article turns attention in its three main sub-sections to the ‘stuff’ of adaptability and its dynamics: resilience, revitalisation and recovery. By deliberately choosing scientific Romance Studies examples to illustrate each section, this article conducts a thought experiment in how Romance Studies research might fruitfully re-articulate to twenty-first-century science and scientism that theirs are not inherently the more advanced intellectual domains. The article then not only clarifies the co-equal place of Humanities’ insights, but also how these are equipped to ascertain key features of optimal adaptability, for the greater potential profit of enriching all critical research.

KEYWORDS Adaptability, skins, still life, stuffing and taxidermy, translation, intermediaries

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The work in this article is my own. It fully acknowledges in endnote references all previous work that supports the arguments presented here. No part of this article has appeared elsewhere in print. It has also not been submitted elsewhere for consideration for publication.

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Nature and human nature across time and place are recurrent themes and concerns in all forms of cultural and scientific production. In the recent digital age, however, ‘big’ science, technology, and data set their value above other natural and human productions by thinly glossing corporate business discourses about the global world as ‘marketplace’ with the glamour of speed, the ‘latest thing’, and technological ‘breakthroughs’. To quote the original conference call imagined by Jane Dunnett†, adaptation is indeed ‘ubiquitous in contemporary culture, giv[ing] rise to a burgeoning new academic field, Adaptation Studies, driven largely by scholars from English and Film (e.g. Linda Hutcheon, Deborah Cartmell, Thomas Leitch)’. If ‘Adaptation Studies’ (and e-journal, *Adaptation*) is in fact not so very ‘new’ – *Intermedialität* (and *intermédialité*) in the 1980s already promoted similar inquiry¹ – adaptation is more importantly a longstanding, and not uniquely human, phenomenon. In ever-changing ecospheres it remains the principal stratagem of all life forms for survival and renewal (reproduction). Likewise human cultural and intercultural (re)productions – whether inter- and intra-lingual, or inter- and intra-medial – constantly adapt, in order to rediscover, reinvent, and retranslate themselves for current and future generation(s). Linda Hutcheon proposes therefore that the territory and status of adaptation (unlike translation) is ‘a derivation that is not derivative—a work that is second without being secondary. It is its own palimpsestic thing.’² In this, she reformulates earlier critical appraisals and taxonomies of the palimpsest, by Gérard Genette for example,³ by retaining the overlay’s precedence and status (intertextual and intermedial) as the main objects of inquiry.

This article by contrast investigates adaptation as the generative, and regenerative, operation determining the further becoming of any natural, as well as cultural, production. In consequence adaptation as medium and/or message, i.e. as a noun designating a cultural object or ‘palimpsestic thing’ is not our focus. Rather by considering *adaptability* as process and condition of all biological, cultural and intercultural renewal – importantly including ‘big’ science and data – this article turns attention to the ‘stuff’ underpinning renewability as a longstanding biological and intercultural *property*. Adaptability will therefore be explored for the three interconnecting *motors* making up its ‘stuff’: resilience, revitalisation and recovery. Appendix 1 sets out how these terms correlate to more familiar operations in translation and adaptation studies. By also deliberately choosing scientific examples in each

section to illustrate the interrelated stuff and motors of adaptability, this article conducts a thought experiment in how Romance Studies research might fruitfully articulate to twenty-first-century science and scientism that theirs are not superior, or distinct, intellectual domains. In clarifying the stuff making up the ‘renewables’ of all natural and cultural (including scientific) productions, can optimal adaptability also be ascertained?

THE STUFF OF THE PALIMPSEST: RESILIENCE

As the OED makes clear, Romance Studies scholars are pre-eminently well-equipped to grasp the underlying qualities of the palimpsest as adaptable ‘stuff’, given its origins, etymology, and qualities: parchment.

[M E. *parchemin* – (O)Fr. *parchemin*, earlier *parcamin* :- Rom. **partiaminum*, which resulted from a blending of L. *pergamina* with *parthica pellis* ‘Parthian skin’, leather dyed scarlet (whence OFr, *parche*, parchment, Pr. *pargue* kind of leather).

Pergamina (sc. *charta* paper) writing material prepared from skins, invented at *Pergamum* (now Bergama) is repr. by Pr. *pargami*, Sp. *pargamino*, OIt, *pergamina*.]

1. The skin of the sheep or goat etc., dressed and prepared for writing, painting, engraving etc. **2.** A skin piece, scroll, or roll of parchment; a manuscript or document on parchment ME.] **3.** A skin or membrane resembling parchment.

The intercultural science (knowledge) on display here only makes the cultural nature and hierarchies of skins particularly prominent: their colours, thicknesses and textures, ideological and religious resonance place those of sheep before goats as a constant determinant and regulator for fashioning European and Romance value-systems and heritages since at least the Middle Ages. Cultural transmission through palimpsestic *activity* is then a secondary advantage to the primary superiority of *vellum* as ‘stuff’ for the export of its value-systems across the globe: resilience to water and other damage, and to wear and tear in multiple reuse. Many of the oldest *portolan* maps would never otherwise have survived long journeys of exploration and conquest. On dry land the *Magna Carta* of King John of England testifies to the similar durability and indelibility of legal authority and liberty upheld in the medium/message of this document.

On the modern global socio-critical map, these underlying politics of skin(s) feature more prominently from the 1950s, notably through feminist, gender, and postcolonial activism. The many intertextual and intermedial approaches to the topic of skin since 2000

only further underscore its highly malleable interdisciplinarity as substantively *human* cultural and intercultural (t)issue.⁴ The underlying *nature* of skins – as epitomized in *vellum* but common to skins of very different non-mammalian inhabitants – is again largely neglected: successful physiological adaptability collocates with their *substance*. The palimpsest’s defining durability and fineness of grain pertain to the transformative nature and definitions of *animal* skins to express what makes human skins across time and place differently, similarly, or particularly of *humankind*. This ‘whatness’ has recently re-emerged in animal studies,⁵ in the wake of Darwinian and modern scientific understandings of evolution and the human genome. A longer Romance Studies viewpoint would envisage both as further adaptations of Epicurean ideas about the nature of things. In the first century BC Lucretius’s *de rerum natura* attempted to map the multiform and multimedia phenomena of planet Earth without recourse to Supreme Beings (although these were not denied). Medieval science by contrast – whether Christian, Muslim or Jewish – variously understood the micro-macrocosm of the Book of Nature as the revealed manifestation of the Book of God, and humankind as having a different status to other creatures in the (divine) order of things. The highly palimpsestic narrative of modern science in its steady erasure of multiple and conflicting heritages then ‘discovers’ its resiliently evaluative ‘stuff’ in the 1980s, when it named the current global geological age the Anthropocene. It is then salutary to compare and contrast the substance and adaptability of skins with the twenty-first-century ‘wonder’ material, (mono-layer) *graphene*, which Professors André Geim and Kostya Novoselov first isolated in the early 2000s using sticky tape.⁶ Their paper on it, published only in 2004 in *Science*, had been rejected twice, because expert peers could not imagine *graphene*’s one-atom-thick sheets to be stable, let alone exhibit its many contradictory (skin-like) features: ‘ultra-light yet immensely tough’; ‘200 times stronger than steel, but [...] incredibly flexible’, ‘a superb conductor and can act as a perfect barrier’.⁷

Nobel Prize-winning 2D *graphene* thus epitomizes the multi-cultural history behind the thin veneer of major ‘discovery’ in modern science, including a complex intertextuality and intermediality of production and dissemination. Space does not permit a ‘Romance Studies’ reading of these backstories or, indeed, of the diasporic dissemination history of Geim and Novoselov (2004) for ‘*graphene* studies’. A more fundamental issue is worth raising, however, regarding its immediately high-profile adaptability. Do patent names with multi-linguistic comprehensibility like *graphene*, conveyed *via* keyword journals such as *Science* or *Nature* with similar malleability, enhance their object’s resilience to replacement, and oblivion? *Nature* is unusual for providing some assistance with an answer: an entire

domain of its website maps its editorial evolution since first appearance in 1869, and as separate from the electronic capture of its entire back archive. For Romance Studies scholars, striking intercultural features not discussed in this domain then stand out. First it was much less ‘new’ than its archivists claim in their account of how the Scottish founders adapted successful models like the *Edinburgh Review*, by extracting and developing their science sections. Such models were themselves adaptations, of earlier European precedents such as the *Bulletin des sciences naturelles et de géologie* established in Paris in 1824. Targeting specialists and general publics, it provided information on all new work in the sciences in their many traditions disseminated in a mix of key excerpts in original languages and translation/*résumés* for the lesser-known. Even as *Nature* overtly promoted Anglophone ‘Scientific Work and Scientific Discovery’ to ‘aid Scientific Men’ [sic] in 1869,⁸ it carried reviews and accounts of new scientific advances in the same mix of original European languages and translations. When English then replaced French (and German) as the major world vernacular and *lingua franca* of science in the early twentieth century the already inter-lingual adaptability of *Nature* automatically attracted non-European contributors – especially in the USA and Asia – into its ‘international’ ambit.

The many ‘palimpsestic’ heritage cultures of allegedly modern science could not be a more central research concern for Romance Studies researchers, far surpassing the translation of science texts in Latin vernaculars for the international Anglosphere. Longer understandings of scientific multiculturalism – particularly in Africa and Latin America – provide very differently transnational appraisals of inter- and intra-lingual collaboration and knowledge exchange outside and with Europe. However by demarcating science as the European ‘other’ of (its) cultures, critical postcolonial studies also too readily overlooks resilient narratives and comparative anatomies for describing the world that have constantly been shared and adapted across knowledge communities.

THE PALIMPSEST OF STUFFING: REVIVIFICATION/REINVIGORATION

The inter-lingual intertextual traditions and trajectories behind modern science are only one of several large pachyderms in the rooms of contemporary science and ‘big’ data. Another is the variety of adaptable media conveying nature, and human cultures, before and alongside the advent and ascendancy of human digital literacies (*via* clay tablet, parchment, paper, pcs). Stone and bone are among the oldest media recording the existence and activities of forms in different skins, particularly long dead creatures – fossil ammonites, mammoths, dinosaurs, Neanderthals – which *Homo sapiens* never witnessed, but has subsequently made knowable

by inference through stratigraphy, fossil reconstruction, and carbon dating. As the discovery in 1994 of the Chauvet-Pont d'Arc Cave paintings in the Ardèche illustrates, ancient evocation of three-dimensional moving and once-living forms transcends, and questions, the bounds of sophisticated multilingual digital recording. Adaptability is thus not only about producing verifiable replications on substances that last the tests of time, but also about modes of intermediation that variously revivify, or conversely re-deaden, their once-living object.

In April 2015 the Chauvet-Pont d'Arc national interpretation and visitor centre, also accessible virtually in several languages,⁹ opened near the protected cave complex. The replica-reconstruction of the cave system chambers and paintings is thus scientifically designed for maximum exposure to visitor traffic, by also preventing human microbes and dirt from destroying the precious ancient artwork, as happened so deleteriously at Lascaux. If the 'theme park' model and medium of Chauvet-Pont d'Arc problematizes distinctions between modern 'citizen', world heritage, and 'big' science, the adaptability of the cave site for conservationist/protectionist scientific endeavour is of greater interest. A related genre, the special scientific report, has proliferated online, made by the authorised few to enter the actual caves with specialist film crews, such as the BBC's Rebecca Morelle. Although overtly 'scientific' documentary-catalogues of the paintings, none is culturally or scientifically neutral. Morelle's for example takes an overtly 'David Attenborough' approach to tracking these rarest of animals 'in the wild', to remake (Western) 'discovery' genres. Mood music builds viewer anticipation as the experts laboriously descend steep limestone escarpments to the protected site. Safety helmet lighting then dramatically illuminates the stalactite/stalagmite formations and cave walls, before Morelle's half-whispered commentary intones patronisingly about the 'surprisingly sophisticated' art¹⁰, as the cameras pan round the caverns to reveal montages of Ice Age fauna – immediately recognisable woolly rhino, bison, lions, bears, horses – with close-up shots identifying them as if leaping out of the rock walls. Cameras then zoom in on different-sized human palm prints in red ochre, before the documentary cuts to interviews with the twenty-first-century re-creators of the artwork installations. In the final sequence the expert chief scientific curator explains the significance of the Pont d'Arc caves: the paucity of animal and human remains found on the cave floors means that they could have been used only for religious/ritual purposes, not regular habitation. Morelle, however, is among the few authorised eye-witnesses to film behind the construction of the *replica* site, where we are shown and told that 'elaborate scaffolding supports the illusion'.

The concrete and virtual replicas thus prove to be less about the ancient art, and more about the illusions (and delusions) of modern science and technology as ‘clean’, that is free of impure and destructive detritus and hence value, culture and palimpsest free. But the double sealing off of the actual and replica cave spaces as control experiments also forecloses all further *informed* evaluation – scientific and cultural – of the ancient art. This is because the comparative, repeatable, experimental scientific method itself is denied that would gauge not only the accuracy, authenticity, faithfulness and objectivity of the several available official versions (see Appendix 1), but also their experiential – *live*, multi-sensorial, 3D – veracity. Indeed the primacy of visual data in the authorized Chauvet-Pont-d’Arc information sites, and as defining the (scientific) evidence for understanding the paintings, only demonstrates modern scientific *blindness* to an array of scenarios allowing the art to be experienced in adaptively multi-mediated formats. Understood as human *opera* in live performance for example, the cave paintings directly re-captivate a new audience recognising in them the startling effects (and affect) of dramatic and imaginative revivification of creatures otherwise long dead, and without recourse to spoken or written language. Community and preparatory activities may also have brought the animals ‘to life’ for the painters (fasting/feasting, decoration of human bodies with the same ochres used to depict the animals). Dance steps, chants, and drumming in the caves’ echo chambers suggesting different animal hooves may have suggested too where to site their owners in a frieze, and why certain limestone features were picked out to produce the most startling effects of their *mise en relief*, as if the actual creature were looming large from the darkness. Why and how such revitalisation effects mattered in respective seasons (marking birth, rebirth and ancestral return) cannot be decided except in the multisensory acoustics of the caves’ between-worlds.¹¹ In producing ‘exact’ visualizations of the paintings, the expert scientific replicas only re-deaden potentially more encompassing actualisation effects. But in further separating and protecting the 30,000 BC dead from the twenty-first-century living, the modern intermediations may inadvertently imitate the same meaning-making *defences* vis-a-vis mortality as their eminently sophisticated pre-historic Pont d’Arc counterparts. The membrane of skin barely separating the material animal and its pelt in reusable form – drums, drinking pouches, cloaks and footwear – from its totemic, memorializing, symbolic representation fleshes out an enduring transcendence of death when transformed onto rounded-out stone surfaces. What is it about the *lifelikeness* of skins that the prehistoric painters sign to, that modern science works particularly hard to put out of sight?

For the visual, plastic and dramatic arts, flesh and substance (and their re-enactment) have always variously signified the positive and negative human values accorded to earthly life, unspeakable death, and afterlife. Like their prehistoric ancestors and the scribes of medieval bestiaries, seventeenth-century still life painters also brought to their genre an experiential, scientific, eye for arresting detail: the pistils of flowers about to drop their petals, the minute blemish on the ripened fruit, blood specks on the breast of a recently dead bird to be plucked for the pot. What lies just under the skin – vegetable and animal – therefore differentiates lives that have only just been stilled, at the very cusp of this exchange of state. The *memento mori* as contemplative genre holds a particularly significant place in all Romance cultures, in both religious art and the *nature morte* (fr.), *natura morta* (it.) *natureza morta* (port.) *naturaleza muerta* (sp.). Only upon *acknowledged* death is the ‘life’ rearrangeable into distilled tableaux humanizing nature in the genre’s domestic settings – hence the alternative Spanish term, *bodegón*, for ‘still life’ – celebrating inevitable processes which are at once allegorical and naturalistic for the visibly absent human owners of the goblets and dishes. Regrouping objects from normally separate marine, terrestrial, and aerial natural spheres within interior settings also enabled the artist to control and domesticate otherwise uncontrollable natural forces and orders.

If the still life was deemed less ‘noble’ than its more epic counterpart forms in the late seventeenth century such as historical subjects, portraiture, and landscape painting (assumed also to demand greater technical and imaginative acumen),¹² the constant cultural displacement of genres and their hierarchies in the arts only stimulates their further revivification (adaptability). This is because they all variously promote their practitioners’ re-rendering of fleshy plastic forms for their many dimensions, perspectives, colours, textures and meanings. For science by contrast, fleshy forms have always posed more major intellectual, and practical, problems and difficulties. Classification of species, for example, has provoked various (Kuhnian) ‘revolutions’ and definitive ‘paradigm shifts’. Only in the early nineteenth-century were fishes no longer a separate class, and anomalies like the duck-billed platypus finally assigned to the *mammalia*. *Homo sapiens* still remains the most troubling, in an order apart from other apes and at the apex of the hierarchy of all animal forms. More banal, and hence overlooked in the ‘epic’ narrative of modern scientific advancements, is the problem of how to preserve dead fleshy forms as if they were alive, or in still-life state. Collections in aristocratic and royal botanical gardens, aviaries and zoos were largely limited to European species, and to flora, fish, and insects that could be dried or

had non-fleshy body parts, such as shells. Even these were subject to rot, mould and insect infestations in the expensive cabinets of curiosities made to house them.

Ancient peoples had of course already discovered how to immortalise the mortal in rock art and in optimal manipulation of natural resources with preservative properties. The retting of leather-clad bodies in the bog-waters of the Arctic tundra proved as successful as the combination of embalming technologies in ancient Egypt with expert engineering of pyramid chambers to conserve dry, stable temperatures. It is thus only when similar knowledge about keeping dead creatures in a natural state again emerges in the late seventeenth century that ‘modern’ sciences of nature seriously begin. History of science normally explains their triumphalist ‘great leap forward’ in this period (and into the nineteenth century) through overseas discovery and exploration (colonial expansion, bio-prospecting and ‘civilizing’ missions).¹³ If the invisibility of women in such exploits is now well-documented, this narrative also blanks out the acumen required to acclimatise, collect and preserve non-European specimens. In the acquiring and accumulation of new ‘world’ scientific knowledge, ‘advances’ therefore come down once more to specialist treatments of *skins*, especially of the class *mammalia* thanks not only to Linnaeus’s name for the thing, but also to the growing presence in museum cabinets of their variety of species. The transformative science and art of ‘stuffing’ – only given the scientific name, ‘taxidermy’, in the nineteenth century – was therefore pivotal to successful conservation of species (overseas and at home), but could not have been developed without the invention in the late eighteenth century (among other chemical preparations) of ‘arsenical soap’, by the French bird collector and pharmacist, Bécœur.¹⁴ The etymology of taxidermy however provides little understanding of the intimate connection between this science and the ‘modern’ scientist. In the late seventeenth century (when the *nature morte* was the least noble art form), the ‘naturalist’ fulfilled the same occupations as the *empailleur*, or stuffer, whose trade often overlapped with the work of the furrier. The nub of the art, craft and science of the ‘naturalist’ was to separate and clean as much of the flesh as possible from the skin, not to form a coat for human use, but to re-form the form of the original animal by giving it new ‘flesh’ without blood. Complete fossil dinosaur skeletons and their reconstructions – by George Cuvier (1769-1832) for palaeontology and natural science, and by Steven Spielberg in ‘Jurassic Park’ (1993) for popular culture – have long informed modern comprehension of how to envisage their exterior forms. Forgotten is the vital work of museum taxidermists undertaking the essential preservation and re-actualization of non-fossil specimen *skins*. If the ‘stuffer’ had never seen the subject in its natural habitats, and/or was working from

inaccurate drawings, the quality of the result was not reliant on the material replacement of flesh with straw (*paille*), or the finer stuff of cotton. Rather the specimen's reality effects were determined by deft remaking: both rounding and hollowing out under the preserved skin and its final pose of arrested natural movement.

Study of the importance of scientific taxidermy focuses mainly on Anglophone heritages, including anthropomorphic fashions in popularizing Victorian practices. Largely uncharted, and hence ripe for Romance Studies investigation, are Catholic cultures of taxidermy – scientific, decorative, and religious – in view of their investments in the rites and taboos of transubstantiation. Flaubert already pokes at these *noli me tangere* of official religion and science at the end of *Un cœur simple*. In her dying moment, Félicité imagines her *stuffed* parrot, Loulou, reincarnated/transfigured/translated into the Holy Spirit of stained glass. Flaubert also puns on the official languages of sermons and scientific naming. To Félicité's illiterate, nearly-deaf, ear and poetic imagination Loulou can only be the refashioned *Paraclet/perroquet*.¹⁵

THE STUFF OF STUFFING: RE(-)COVERY

Taxidermy's salient combination of arts and sciences therefore demonstrates both the resilient plastic adaptability of skin and its revivifying underlying substance, but seen from the inside out, as well as from outside surfaces in. Such recasting of identifiable forms do not, however, preclude their further adaptability into very different 'skins'. As the little-studied *Taxidermy* of 1820 (anonymous, but by Sarah Bowdich, 1791-1856) unpacks, key processes of *recovery* determine the commonalities and uniqueness of species. As in earlier taxidermy manuals, birds form her 'beginners guide' to teaching the fundamentals: careful extrication and replacement of the original bones and flesh. Wires easily passed through the legs provide new carcass supports for the bird's wings and head, whereas the heavy skins of much larger animals, such as elephants, have to be re-stretched over specially-prepared and chemically treated supporting wooden frames. But Bowdich's transformative work on the 'stuff' and 'stuffing' of her text as much as on matters of scientific taxidermy reveals the close resemblances between the work of the expert scientific taxidermist and the expert literary translator.¹⁶ To my knowledge this connection has only been made overtly by the poet and translator, Robert Lowell, in the introduction to his collection of free adaptations of works by major European poets, entitled *Imitations*. Lowell's particular *bête noire* is the metrical translator:

Most poetic translations come to grief and are less enjoyable than modest photographic prose translations [...] Strict metrical translators still exist. They seem to live in a pure world untouched by contemporary poetry. Their difficulties are bold and honest, *but they are taxidermists, not poets, and their poems are likely to be stuffed birds*. A better strategy would seem to be the now fashionable translations into free and irregular verse. Yet this method commonly turns out a sprawl of language, neither faithful nor distinguished, now on stilts, now low [...] I believe that poetic translation – I would call it an imitation – must be expert and inspired, and needs at least as much technique, luck and rightness of hand as an original poem.¹⁷

Like the replica cave-makers at Chauvet-Pont d'Arc these metrical translators also seek 'a pure world', but Lowell's pejorative comparison to 'taxidermists' producing 'stuffed birds' is equally revelatory. His metaphor uncovers his lack of *insider* knowledge of scientific taxidermy as opposed to (Victorian) consumer forms and aesthetics which appear to inform his cultural assumptions. But as expert wordsmith, Lowell's equal rejection of 'free and irregular' forms by qualifying 'stuffed bird' with 'on stilts' returns us to the key recovery *processes* intrinsic to the main purpose of scientific taxidermy work as richly informative for translation (and adaptation) theory and practice, literary and scientific.

The core purpose and process of scientific taxidermy is expert preparation, preservation and mounting of the 'skin' so as to re-collect and re-cover its life-likeness. Different skin types (genres) require additional attention. Scientific, as well as literary 'translators' must indeed be 'expert and inspired', to prevent their productions being a 'sprawl', that is *hollow* imitations. It is then easiest to reapply the process for metrical poetry (stuffing birds) to other textual and non-textual forms. The original skin of the text first requires expert curation, by working behind and from within it to prevent spoilage and collapse. The original compositional flesh and bones of the poem, especially the components making up its supporting metre and rhyme will have to be removed, but in order to leave intact the configuration of their identifying shape, form, and features. The new wires of the grammar and syntax supporting the new form must then be carefully introduced as pivotal supports, before the new linguistic or other medial 'cotton' is added, to round or hollow out the overall shape in the appropriate places by the right amount. The finally prepared production then requires 360° primping, alert to iconic sonorities, colours or other significant identifying features, so that it can be appropriately posed with similarly life-alike generic and sub-generic attributes. The technical terms in scientific prose and its translation are then not so unlike metrical poetry and its translation in their necessities of meaning, context, and intrinsic textuality as much as of intertextuality because, as Venuti has argued, 'reception is a

decisive factor'.¹⁸ The test for adaptability as resilience, revivification and recovery of old forms in new ones makes reception *the* deciding and decisive factor: those recognition-effects that satisfy, or conversely dull, the eye and ear of the new beholder are determined against what Lowell calls 'the fire and finish of [his] originals' (1960, p. xi).

Understanding adaptability of forms not as priority of versions, but as reincorporation from beneath their 'skin' variously to refit it authentically thus reconstructs *plastic* modes of cultural and scientific knowledge-making that value hidden supports ('scaffolding' above) as much as surface features. A finished production will therefore only more blatantly shriek its *stiltedness* if the new frame pokes through, if it does not adequately refit its renewed cover, or if the final 'pose' lacks three-dimensional touch. Lack of 'expert and inspired' remodelling of substance into form regarding any of these will show up artificiality and artifice. Thinking as a scientific taxidermist- translator, then, brings to understanding of adaptability in the arts and sciences a greater appreciation of multi-sensorial appraisal and re-expression effects, and their affect for new audiences. In their stunning depiction of ancient creatures the Chauvet-Pont d'Arc cave painters already display Lowell's defining 'technique, luck and rightness of hand', their overt acknowledgement of the many right (and left) contributing expert hands upon the same rocky surfaces and depths in which they reworked their materials into re-imagination of their animal subjects.¹⁹ Their effect could not have been captured and executed without intimate technical, scientific and *inspired* knowledge of moving forms, and how to translate them movingly for human audiences in the religious sense of moving them to another plane of experience.

Adaptability rather than adaptation therefore offers a more kinetic, mobile, multi-dimensional and multi-sensorial model for understanding re-creative imitation and translation as opposed to their flattened simulacra. The Chauvet-Pont d'Arc artists therefore remind us of at least two important considerations for optimal regenerative adaptability. First, the capture of vitality comes with acute awareness and knowledge of a 'total sensation effect' for both maker and audience which ultimately transcends the need for the media of language. Second, the stuff of successful adaptability lies not only in the expert heads, but also in the knowledgeable hands and handling of expert naturalist-translators. Are modern science and *digital* technologies harnessing or only aping in the 'internet of things' the rich variety of multiply-mediated skeins and skins of knowledge?

THE STUFF OF ADAPTABILITY AND THE INTERMEDIARIES OF SCIENCE

In choosing scientific Romance Studies examples to illustrate each section of this article, its whole thus far also demonstrates how co-dependent are the endeavours and modes of expression of culture and science (*scientia*, knowledge) from earliest-recorded human civilisation. The increasing protectionism, separatism and superiority of modern science are premised since Galileo on driving ‘advance’ – *via* specialism, difficulty, use by the few of expensive new instruments and technologies – away from the supposed un-enlightenment of such ancestries. By too readily conceding their powers of longer memory and celebration of diversity and heterogeneity, Humanities and Romance Studies traditions have colluded in the separation of specialisms and spheres, instead of promoting the endlessly adaptable returns of transdisciplinary, cross-cultural, and multi-media knowledge including the scientific. For Humanities practitioners pursuing such returns, adaptability’s *known* counter faces and forces bring stark re-galvanisation of energy: homogenization, hegemonic monocultures and *lingua francas* reveal the ‘global market’ as ultimately a planetary Easter Island. The Anthropocene long predates the 1980s.

Optimal adaptability by contrast resides in the proactive appreciation, fostering, and enriching of the bio-centric ‘stuff’ of renewability, with its strengths of resilience, revivification, and recovery. Because renewability is everywhere reliant upon heterogeneous natural and cultural productions as driving, not driven by, ‘big’ scientific endeavour, modern Humanities are similarly challenged to re-collect their powers. One is extensive expertise in stepping *back* to recover the many already available models. Another is therefore the ability to discern between comparisons, and thus to identify, name, and reject the false, stilted, ‘stuffed birds’ of over-weaning *scientism* in both the sciences and the arts. Take for example the fascination with the scientific method and alleged objectivity of post-war modern science lauded by the ‘*école du regard*’ writers, including Robbe-Grillet. The famous tomato description in his novel of 1953, *les Gommages*, suggests that it is a signally palimpsestic investigation:

Un quartier de tomate en vérité sans défaut, découpé à la machine dans un fruit d’une symétrie parfaite.

La chair périphérique, compacte et homogène, d’un beau rouge de chimie, est régulièrement épaisse entre une bande de peau luisante et la loge où sont rangés les pépins, jaunes, bien calibrés, maintenus en place par une mince couche de gelée verdâtre le long d’un renflement du cœur. Celui-ci, d’un rose atténué légèrement granuleux débute du côté de la dépression inférieure, par un faisceau de veines blanches, dont l’une se prolonge jusque vers les pépins — d’une façon peut-être un peu incertaine.

Tout en haut, un accident a peine visible s'est produit : un coin de pelure, décollé de la chair sur un millimètre ou deux, se soulève imperceptiblement. (p. 161)

If it has recently returned to critical attention in Rosemary Lloyd's study of the still life, she downplays the dehumanizing context for this description -- the tomato is on a plate in an automatic vending machine replicated by its multiple others -- which Michel Delville overplays as Robbe-Grillet's 'vision of the fast-food industry [...], the general uniformization of the culinary landscape that reduces our taste options and abolishes the traditional 'gestural' link behind the cook and the client.'²⁰ But this description primarily displays the myopic, disembodied, and *handless*, clinical 'scientific' dissector in the laboratory, lost without machines and the metaphors of human culture such as 'loge', 'faisceau', to describe and situate the 'anatomy' of the tomato. In my everyday cultural work of Modern Languages teaching I engage with such 'stuffed bird' science by drawing students' attention to passages which problematize the relentless promotion of big science claims and methodologies as in fact the mundane knowledge (science) of the everyday, accessible to all once the glamour is removed. As a fine comparative talking point about scientific justification for vivisection this contemporary adaptation of the *bodegón* (as genre and community for ingestion and digestion), reveals the flesh of the scientifically-produced tomato to be skin-deep, artificially coloured, tasteless, and therefore without smell or enjoyment.

But the favoured critical method in the Humanities is also to analyse, dissect, cut open and pull apart rather than restore, revivify and recover. My second riposte to 'stuffed birds' is to galvanize (inter)cultural counter-example, displaying the rich possibility and virtuosity that is self-reflective interdisciplinary and intertextual/intergeneric reworking attentive to exuberant adaptability. The iconic tomato is the signature object, but not signature dish of Muriel Barbery's *Une Gourmandise* (Folio, 2000), winner of the 'Meilleur Livre de Littérature gourmande' that year. The story concerns the renowned, pompous, male food critic protagonist on his deathbed, trying to recall the illusive flavour and foodstuff that he desires as his last meal. Voluntary and involuntary memory à la Proust is part of the cultural intertextuality of this work which, in a chapter entitled 'Le potager', also mimics in set-piece counterpoint the Robbe-Grillet tomato above:

Elle l'avait cueillie, elle entre toutes les autres, sans un instant d'hésitation. [...] Son discernement aigu balayait la surface du potager et en prenant la mesure climatique, en une microseconde indécélable à l'appréhension courante du temps – et elle savait [...] elle savait lequel de ces petits dômes rouges il fallait cueillir *maintenant*. Dans sa main sale et déformée par le travail des champs, il reposait, cramoisi dans sa parure de

soie tendue à peine vallonnée de quelques creux tendres ; la bonne humeur en était communicative, celle d'une dame un peu grassouillette comprimée dans sa robe de fête mais compensant cette contrariété par un potelé désarmant qui donnait l'envie irrésistible d'y croquer à belles dents. Affalé sur le banc, sous le tilleul, je me réveillais d'une sieste voluptueuse bercée par le chant des feuilles et, sous cet auvent de miel sucré, je mordais sans le fruit, je mordais dans la tomate (pp. 59-60).

This is still *life*, not *nature morte*, the capture and captivation of the present, of multi-sensorial experience and the synaesthesia of taste. The ambiguous 'elle' is the illiterate Aunt Marthe, owner of a squalid home in which the snobbish narrator and his family never eat. Yet her abundant *potager* and science exceed the most sophisticated of regulated laboratories or greenhouses, and without her need to test/experiment on the ripeness of the fruit – not named until the end – by touch or instrument. The hollow of her dirty, gnarled hand is, however, her primary medium for communicating and displaying her work in the tomato's fulsomely irresistible, multi-sensorial, ripeness. This description encapsulates the stuff of adaptability as discussed above: renewable resilience (to cliché), revivification of familiar subjects, and recovery of angles of experience (as also a French-Moroccan work) showcasing the verve of the science and knowledge of the everyday that configures the unending pleasures of the (unadulterated) flesh, the world, and the text in an ending gargantuan feast:

En salade, au four, en ratatouille, en confitures, grillées, *farcies*, confites, cerises, grosses et molles, vertes et acides, *honorées d'huile d'olive*, de gros sel, de vin, de sucre, de piment, *écrasées, pelées*, en sauce, en compote, en écume, en sorbet même ; je croyais en avoir fait le tour [...] Sucre, eau, fruit, pulpe, liquide ou solide ? La tomate crue, dévorée dans le jardin sitôt récoltée, *c'est la corne d'abondance des sensations simples*, une cascade qui essaime dans la bouche *et en réunit tous les plaisirs*. *La résistance* de la peau tendue, juste un peu, juste assez, *le fondant des tissus*, de cette liqueur pépineuse qui s'écoule au coin des lèvres et qu'on essuie sans crainte d'en tacher les doigts, cette petite boule charnue *qui déverse en nous des torrents de nature* : voilà la tomate, *voilà l'aventure*. (pp. 60-61, emphasis added)

Where the *nouveau romancier's* 'aventure de l'écriture' turns out to be a sterilizing 'palimpsestic thing', Aunt Marthe's vegetable-garden cornucopia recovers the richly over-spilling adventure of the 'stuff' of science and culture as infinite adaptability, and as source of creative critical inspiration for modern Romance Studies research.

This article therefore celebrates the late Jane Dunnett's inspired choice of 'adaptation' to stimulate Romance Studies debates by unpacking its generative and regenerative operation: adaptability. In examining its 'stuff' through scientific examples we have also re-engaged with its fundamental bio-centrism, and life drives (to bowdlerise Freud), so as to

formulate its optimal properties as plastic, multi-sensorial, and multi-medial. Adaptability's continuities are therefore guaranteed if bio- and cultural diversity are world currencies, and if sophisticated apprehensions of their optimal encounter – exemplified in the work of the Chauvet-Pont-d'Arc artists – are not deadened and reburied by the virtual 'enhancements' of the digital Anthropocene. The most expert intermediators of adaptability's continuities will therefore continue to be those in flesh and blood, equipped with Lowell's 'fire' and 'rightness of hand' to grasp their subject as if it were both a ripe tomato and its plethora of differently adaptable *natural varieties* and dishes. This article therefore wishes all cultivators of scientific Romance Studies 'bon appétit!' to partake of the deep pleasures of thinking adaptability, and to take up the challenges of biting into the 'torrents de nature' to feed the critical, cultural and scientific imagination.

Appendix 1

Translation Studies	Adaptation Studies (cf. Hutcheon, 2013, p. 9)	Adaptability
‘source’ vs ‘target’ text	‘a creative <i>and</i> an interpretive act of appropriating and salvaging’	resilience
‘original’ vs ‘iteration’, ‘version’ or ‘supplement’	‘an extended intertextual engagement with the adapted work’	revitalisation
‘faithful’ vs ‘unfaithful’	‘an acknowledged transposition of a recognizable other work or works’	re-recovery

NOTES

¹ For a critical survey of the history and theories of ‘Intermedialität’ (sharpening German theories of ‘Intertextualität’ and Kristevan intertextuality as ‘network of texts’), see Jens Schröter, ‘Discourses and Models of Intermediality’, *CLCWeb: Comparative Literature and Culture*, 13: 3 (2011): <http://dx.doi.org/10.7771/1481-4374.1790> [consulted 27/07/2015].

² Linda Hutcheon with Siobhan O’Flynn, *A Theory of Adaptation* 2nd ed. (Abingdon, Oxon. & New York: Routledge, 2013), p. 10.

³ Gérard Genette, *Palimpsestes. La littérature au second degré* (Paris : Éditions du Seuil, 1982).

⁴ See for example Laura Marks, *The Skin of the Film: Intercultural Cinema, Embodiment and the Senses* (Durham and London: Duke University Press, 2000); Steven Connor, *The Book of Skin* (London: Reaktion Books, 2004); Nina Jablonski, *Skin: a Natural History* (Berkeley and Los Angeles: University of California Press, 2013); Dorothy Allison, *Skin: Talking about Sex, Class and Literature* (2013) and *Skin, Culture and Psychoanalysis* ed. by Sheila C Cavenagh, Angela Failler and Rachel Alpha Johnston Hurst (Basingstoke: Palgrave Macmillan, 2013).

⁵ See for example Lorraine Daston and Gregg Mitman, eds. *Thinking with Animals: New Perspectives on Anthropomorphism* (NY: Columbia University Press, 2006) and Cary Wolfe, ‘Human, all too Human: “Animal Studies” and the Humanities’, *PMLA*, 124:2 (2009), 564-75.

⁶ See <http://www.graphene.manchester.ac.uk/explore/the-story-of-graphene/> [last consulted 28/7/2015].

⁷ See <http://www.graphene.manchester.ac.uk/explore/what-can-graphene-do/> [last consulted 28/7/2015].

⁸ See <http://www.nature.com/nature/journal/v1/n1/index.html> [last consulted 29/7/2015].

⁹ See <http://archeologie.culture.fr/chaudet/> [last consulted 29/6/2015].

¹⁰ See <http://www.bbc.co.uk/news/science-environment-32442850> [last consulted 29/6/2015]. The equivalent German production assesses the artwork as ‘unheimlichen künstlerischen Perfektion’ to describe its scientific and aesthetic quality at <http://www.faz.net/aktuell/feuilleton/kunst/replik-der-grotte-chaudet-mit-hoehlenmalereien-13557202.html> [last consulted 29/6/2015].

¹¹ Chambers, caves and cavities come together in Latin *antrum* (cf. fr. *antre*, lair of an animal) and the cavities in the body.

¹² See for example the treatise by André Félibien in 1668.

¹³ See for example Nicholas Jardine, James A. Secord and Emma Spary, eds., *Cultures of Natural History* (Cambridge: Cambridge University Press, 1996).

¹⁴ See Pat A. Morris, *A History of Taxidermy: Art, Science and Bad Taste* (Ascot: M.P.M. Publishing, 2010).

¹⁵ As I have investigated in ‘Arsenic and Old Plush? Sinister Deaths in *Un Cœur simple* by Gustave Flaubert’, *French Studies Bulletin*, 120 (Autumn 2011), 62-5.

¹⁶ The work is a double translation, adapting and stretching the parts into one pared-down whole. See Mary Orr, ‘The Stuff of Translation and Independent Female Scientific Authorship: the Case of *Taxidermy...*, anon. (1820)’, *JLS*, 8:1 (2015), 27-47.

¹⁷ Robert Lowell, *Imitations* (London: Faber and Faber, 1962), pp. xi-xiii (pp. xi-xii, my emphasis). My especial thanks go to Alison Martin for drawing my attention to this reference.

¹⁸ Lawrence Venuti, ‘Translation, Intertextuality, Interpretation’, *Romance Studies* 27:3 (2009), 157-173 [p. 157].

¹⁹ I have uncovered no online comment positing or imagining androcentric interpretations of the Pont d’Arc paintings, although smaller hands clearly left their imprints on the cave walls. The context in which the conference version of this article was prepared was Nobel Prize Winner Tim Hunt’s comments – allegedly light-heartedly – on the ‘trouble with girls’ in the laboratory, stimulating the infinitely more witty and adaptive ripostes at [#DistractinglySexy](#).

²⁰ Rosemary Lloyd, *Shimmering in a Transformed Light: Writing the Still Life* (Ithaca and London: Cornell University Press, 2005), p. 3 and Michel Delville, *Food, Poetry and the Aesthetics of Consumption* (New York: Routledge, 2008), p. 91.